

GRAVITATING TOWARD SENSIBLE RESOLUTIONS: THE PCA
OPTIONAL RULES FOR THE ARBITRATION OF DISPUTES
RELATING TO OUTER SPACE ACTIVITY

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I. INTRODUCTION

Since the commencement of state activities in outer space with the “space race” in the late 1950s and 1960s between the United States and the former Soviet Union,¹ a need has developed for a unique framework through which actors can resolve conflicts revolving around outer space activities. This development emerged predominantly in the 1990s and 2000s due to advancing technology, addition of parties engaging in space activities, and commercialization of outer space.² In response to the perceived void in outer space activity dispute resolution,³ on December 6, 2011, the Permanent Court of Arbitration (PCA) adopted the Optional Rules for the Arbitration of Disputes Relating to Outer Space Activities (Outer Space Rules).⁴ While the Outer Space Rules are based on the commonly-used 2010 United Nations Commission on International Trade Law Arbitration Rules (UNCITRAL), they are modified to cater to the unique aspects of disputes that contain outer space elements.⁵ Such disputes can stem from outer space pursuits by states, international organizations, and private entities.⁶

In recent decades, commercial uses of outer space in the areas of satellite communications, launching facilities, and remote sensing have largely accounted for a substantial increase in space traffic.⁷ The diversity and number of actors engaged in outer space activities have also increased.⁸ Given these changes, it seems likely that in the future more disputes related to outer space conduct will arise among not only state actors, but also private parties, national and multinational corporations, and international organizations. Moreover, with the concept of space tourism entering the scene, private individuals will potentially have space-related conflicts.⁹ Combining the above factors with key space activity considerations like the extreme expenses, the complex technology required, and the consequent

¹ *The Space Race*, HISTORY.COM, <http://www.history.com/topics/space-race> (last visited Mar. 23, 2014).

² Michael Listner, *A New Paradigm for Arbitrating Disputes in Outer Space*, THE SPACE REVIEW: ESSAYS AND COMMENTARY ABOUT THE FINAL FRONTIER (Jan. 09, 2012), <http://www.thespacereview.com/article/2002/1>.

³ *Id.*

⁴ Comm. on the Peaceful Uses of Outer Space, Legal Subcomm., 51st Sess., Mar. 19–30, 2012, U.N. DOC. A/AC.105/C.2/2012/CRP.17 (Mar. 12, 2012) [hereinafter Outer Space Rules].

⁵ Alison Ross, *A Giant Leap for Arbitration?*, GLOBAL ARB. REV., Dec. 14, 2011.

⁶ *Id.*

⁷ Fausto Pocar, *An Introduction to the PCA's Optional Rules for Arbitration of Disputes Relating to Outer Space Activities*, 38 J. SPACE L. 171, 174 (2012).

⁸ *Id.* at 175.

⁹ *Id.*

necessity of international cooperation, disputes are certain to pop up on the international stage.¹⁰

This Note analyzes how outer space activities have evolved from the 1950s to present-day conduct. Part II discusses problems with current controlling space laws and introduces the Outer Space Rules. Part III examines why the Outer Space Rules provide an effective means for space activity dispute resolution and how they fill the current void in this area, given the changes in recent decades.

II. BACKGROUND

A. The Beginning of Outer Space Activity: Technology and Players

Following World War II, as the United States and the Soviet Union emerged as world superpowers, each became suspicious of the other.¹¹ This period of hostility and espionage between the two countries, known as the Cold War, ultimately helped spur the space race.¹² In an effort to gather intelligence on the Soviet Union, and after the Soviet Union refused to accept President Eisenhower's proposed "Open Skies" policy permitting each nation to fly reconnaissance aircraft over the other, Eisenhower announced on July 29, 1955, that the United States would commence work to launch a satellite.¹³ Instantly, the Soviet Union announced the same.¹⁴

The Soviet Union launched a satellite called Sputnik 1, representing the first unmanned mission into space, on October 4, 1957.¹⁵ Next, they launched Sputnik, which carried a dog, on November 3, 1957.¹⁶ The space race era produced a great amount of space exploration, as each country sought to outstrip the other in progress and technology.¹⁷ The two countries made great strides in space exploration and the first manned mission was achieved by the Soviet Union on April 12, 1961.¹⁸ The space race culminated with the United States, working through its National Aeronautics

¹⁰ *Id.*

¹¹ *Space Race Time Line*, PBS NOVA, <http://www.pbs.org/wgbh/nova/astrospies/time-nf.html> (last visited Mar. 2, 2014).

¹² *Id.*

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *The History of Space Exploration*, ONLINE STAR REGISTER, <http://osr.org/en-us/articles/the-history-of-space-exploration/> (last visited Mar. 2, 2015).

¹⁶ *Id.*

¹⁷ *Id.*

¹⁸ *Space Race Time Line*, *supra* note 11.

Space Administration (NASA), successfully launching the manned Apollo 11 mission, making the first safe manned landing on the moon on July 20, 1969.¹⁹

B. The Modern-Day Space Picture

While outer space activities were originally the exclusive territory of governments—mainly the United States and Soviet Union—the space club membership has since expanded to more than thirty nations, most notably including China, France, the United Kingdom (U.K.), and India.²⁰ In addition, private space enterprises have sprouted up in recent years, engaging in everything from scientific experiments to space tourism.²¹

With this expansion of state involvement in outer space activities, scientific development and cooperation between international space organizations and states has also grown. A prominent example of this includes the International Space Station (ISS). Earlier projects include a 1975 European Space Agency (ESA) mission to examine the foundations of extra-terrestrial gamma radiation at energies above 30 MeV, and an ESA-NASA-U.K. 1978 mission to study ultraviolet light from the stars along with storm signals of cosmic upheavals.²² Additional examples include a 1989 Japanese-Canadian cooperation to study auroral phenomena, and a 1998 cooperative mission between Japan, the United States, Canada, Sweden, and Germany to study Martian plasma.²³ These illustrations show how critical international cooperation is to scientific missions to space and that space-related disputes require a settlement mechanism that is equipped to deal with this highly specialized, technologically complex, and evolving area of activity involving diverse actors.

¹⁹ *The History of Space Exploration*, *supra* note 15.

²⁰ GERARDINE MEISHAN GOH, DISPUTE SETTLEMENT IN INTERNATIONAL SPACE LAW: A MULTI-DOOR COURTHOUSE FOR OUTER SPACE 164 (2007); Chia-Jui Cheng, *International Arbitration System as a Mechanism for the Settlement of Disputes Arising in Relation to Space Commercialization*, 5 SING. J. INT'L & COMP. L. 165, 165 (2001).

²¹ See, e.g., Jennifer Pollard, *How the Private Sector Revolutionized the Space Race in a Few Short Years*, BUS. INSIDER (Sept. 11, 2012), <http://www.businessinsider.com/how-the-private-sector-revolutionized-the-space-race-in-a-few-short-years-2012-8> (describing private efforts at space exploration).

²² GOH, *supra* note 20, at 153.

²³ *Id.* at 153–54.

As of 2013, “the global space economy” was valued at \$314.17 billion.²⁴ The commercial sector comprised 76% of that number, with approximately \$116.24 billion allocated to commercial infrastructure and support industries, and \$122.53 billion allocated to commercial space products and services, such as services provided by satellites.²⁵ World government spending accounted for a mere 24% of the global space economy, ringing in at about \$75.4 billion.²⁶ Because of the large monetary value of space activities, private actors are getting involved in space pursuits. Partly spurring this increased participation by private actors and commercialization of space is a movement by governments to operate their space programs on a commercial basis by providing launch services, satellite communications, and other market-oriented commercial services.²⁷ In addition, private actors now have the opportunity to participate in space activity areas that require less governmental responsibility, as shown by the commercialization of telecommunications, remote sensing, and ground-based satellite operation systems.²⁸

1. Commercialization of Outer Space

Until the early 1980s, the launching of space vehicles and satellites into outer space was solely carried out under governmental sponsorships, including those launches seeking to place commercially owned and operated communications satellites into orbit.²⁹ Arianespace Corporation, a French hybrid public-private corporation with ties to the French space agency, was the first company to launch satellites for commercial customers and began operations in 1982.³⁰ U.S. launch vehicles, or carrier rockets, such as Delta and Atlas, began to pursue commercial customers in competition with Arianespace in the late 1980s.³¹ By 1983, the Soviet Union was seeking commercial customers through Glavkosmos, a marketing organization, and

²⁴ Marcia S. Smith, *Space Foundation: Space Economy Grew by 4 Percent in 2013*, SPACE POLICY ONLINE (May 19, 2014, 9:36 PM), <http://www.spacepolicyonline.com/news/space-foundation-space-economy-grew-by-4-percent-in-2013>.

²⁵ *Id.*

²⁶ *Id.*

²⁷ GOH, *supra* note 20, at 159.

²⁸ *Id.*

²⁹ *Commercial Launch Industry*, ENCYCLOPEDIA BRITANNICA, <http://www.britannica.com/EBchecked/topic/332323/launch-vehicle/272750/Commercial-launch-industry> (last visited Apr. 16, 2014).

³⁰ *Id.*

³¹ *Id.*

China was doing the same by 1985 with its Chang Zheng family of launchers marketed by the China Great Wall Industry Corporation.³² Japan, India, and other nations have since followed suit as well.³³

But the global expansion of commercial communications companies created a market demand for commercially provided satellite launch services, and those wishing to launch communications satellites had the motivation to invest millions of dollars to accomplish this.³⁴ When stringent government controls on commercial space activities were relaxed in the 1990s, national and multinational companies began to join in commercial use of outer space.³⁵ By 1996, global commercial utilization, development, manufacturing, and operation of space hardware and infrastructure activities represented 53% of all outer space expenditures.³⁶ By 2013 this figure had increased to 76%.³⁷

The increase in private space companies has necessitated the expansion of international space law to cover the activities not only of states and international organizations, but also of these private enterprises.³⁸ The main concern here is that some partnerships have been established between the public and private sectors to engage in space activities, complicating the application of public international law in the area of outer space disputes.³⁹ The foundational principles of societal and public use of outer space must be balanced with these valid private interests.⁴⁰

2. *Private Entities Engaged in Space Activities*

Numerous private corporations have plans, and indeed the technology may be feasible in the near future, to mine asteroids in outer space for precious metals, such as gold, platinum, and rhodium.⁴¹ For example, a Seattle-based company, Planetary Resources, claims that within the next ten years it plans to mine “near Earth asteroids,” a proposal that will cost billions of dollars.⁴² Its investors include Google’s Eric Schmidt and Larry Page and

³² *Id.*

³³ *Id.*

³⁴ *Id.*

³⁵ Cheng, *supra* note 20, at 165–66.

³⁶ GOH, *supra* note 20, at 159; Smith, *supra* note 24.

³⁷ GOH, *supra* note 20, at 159; Smith, *supra* note 24.

³⁸ Cheng, *supra* note 20, at 166.

³⁹ GOH, *supra* note 20, at 158.

⁴⁰ *Id.*

⁴¹ Charles Arthur, *Google Pair Back Plan to Lasso Asteroids and Mine them for Precious Metals*, THE GUARDIAN (Apr. 24, 2012, 2:21 PM), <http://www.guardian.co.uk/science/2012/apr/24/mining-asteroids-on-moon-precious-metals?INTCMP=SRCH>.

⁴² *Id.*

former U.S. presidential candidate Ross Perot. Additionally, in some cases private corporations are taking over from governments the provision of space shuttles to taxi astronauts into space. For example, NASA recently selected three aerospace companies to which it plans to give more than \$1.1 billion for the creation of small rocket ships to transport astronauts to the ISS.⁴³ This effectively invited private corporations “to take over the job of the now-retired [NASA] space shuttle.”⁴⁴

3. *Satellite Use*

The list of social and private benefits provided by the nearly 1,000 active satellites in orbit as of April 1, 2012, includes better-quality disaster warning and response, consistent global communications and navigation, and heightened national and international security.⁴⁵ One example of the trend toward increased commercialization and privatization of satellites is illustrated by recent actions in Japan. In September 2012, the Japanese space agency, JAXA, announced that Mitsubishi Heavy Industries (MHI) had taken over responsibility from the Japanese government for all launches of Japan’s H-2B rocket, which is used for activities such as placing unmanned cargo freighters into orbit for supply runs to the ISS.⁴⁶ This privatization move allows for lower production and operating costs, which permits Japan to become a bigger player in the global commercial launch market.⁴⁷

4. *Space Tourism Industry*

Microsoft co-founder Paul Allen and American aerospace engineer Burt Rutan funded the suborbital air-launched spaceplane, SpaceShipOne, which

⁴³ Seth Borenstein, *NASA Picks Three Private Firms to Develop Space Taxis*, HUFFINGTON POST (Aug. 3, 2012, 2:03 PM), http://www.huffingtonpost.com/2012/08/03/space-taxis_n_1738126.html.

⁴⁴ *Id.*

⁴⁵ Brian Weeden, *The Economics of Space Sustainability*, SPACE REVIEW: ESSAYS AND COMMENTARY ABOUT THE FINAL FRONTIER (June 4, 2012), <http://www.thespacereview.com/article/2093/1>; *UCS Satellite Database*, UNION OF CONCERNED SCIENTISTS, http://www.ucsusa.org/nuclear_weapons_and_global_security/space_weapons/technical_issues/ucs-satellite-database.html.

⁴⁶ Peter B. de Selding, *Mitsubishi Taking Over H-2B Launch Operations*, SPACENEWS (Sept. 23, 2012), <http://www.spacenews.com/article/mitsubishi-taking-over-h-2b-launch-operations>.

⁴⁷ *Id.*

gave rise to the first private space travel.⁴⁸ Following this foray, Richard Branson founded Virgin Galactic, the world's first commercial space tourism company.⁴⁹ Additionally, since 1998, Space Adventures, a Virginia-based company with an office in Moscow, uses a Russian Soyuz spacecraft and works with wealthy individuals who wish to travel to outer space as tourists.⁵⁰ Space Adventures successfully launched five people into outer space to MIR, Russia's former space station, which is no longer in orbit, and more recently to the ISS.⁵¹ Considering the surge in space tourism, private parties will likely need an international forum in which to resolve dispute claims. More trips are already being booked by various companies.⁵² Virgin Galactic claims to have more than 500 to-be space-farers presently signed up for its space tourism ventures, including celebrities like Tom Hanks and Angelina Jolie.⁵³ Whether it is a short two hour flight for \$200,000 with Virgin Galactic, a trip from Russia to the ISS for \$20 million, or a longer voyage for upwards of \$150 million for a stay at a "gravity-neutral point" near the moon, space tourism is now an actuality.⁵⁴

One important complication to private space activities is that these private parties may be of different nationalities than that of the corporation they contract with to launch into space. With such extensive sums of money on the line, a forum for resolution of disputes that can accommodate the overlap between nationalities and public and private law is imperative.

C. Dispute Resolution in Space Law

A major issue resulting from the commercialization and expansion of outer space activities and the increasing number of space actors is that of the

⁴⁸ Mandy de Waal, *Outer Space: The Filthy Frontier*, DAILY MAVERICK (May 4, 2012), <http://dailymaverick.co.za/article/2012-05-04-outer-space-the-filthy-frontier>.

⁴⁹ *Id.*

⁵⁰ Christopher M. Hearsey, *A Review of Challenges to Corporate Expansion into Outer Space* (AIAA SPACE 2008 Conference and Exposition, Discussion Paper, 2008); Mike Wall, *Next Giant Leap for Space Tourism: A Trip Around the Moon*, SPACE.COM (Apr. 28, 2011), <http://www.space.com/11502-space-tourism-moon-mission-space-adventures.html>.

⁵¹ Hearsey, *supra* note 50; David Harland, *Mir*, ENCYCLOPAEDIA BRITANNICA, <http://www.britannica.com/EBchecked/topic/384746/Mir>.

⁵² *Space Tourism Close to Reality?*, UNITED PRESS INT'L (Sept. 8, 2012), http://www.upi.com/Top_News/US/2012/09/08/Space-tourism-close-to-reality/UPI-34541347125258/.

⁵³ Patrick Manning, *World's First Spaceport Nearly Ready in New Mexico*, ASSOCIATED PRESS (Sept. 24, 2012), <http://www.foxnews.com/science/2012/09/24/world-first-spaceport-nearly-ready-in-new-mexico/>; *Space Tourism Close to Reality?*, *supra* note 52.

⁵⁴ *Space Tourism Close to Reality?*, *supra* note 52.

rights and obligations of the parties to a contract.⁵⁵ The contracts may be between two private entities, including private individuals with the advent of space tourism, or between a private entity and a government agency or an international organization.⁵⁶ But how can the rights of actors in these agreements dependably be safeguarded, and how can liability between the parties be settled?⁵⁷ Many international disputes are likely to arise, considering the facts that (a) entities will probably be of different nationalities and may involve multiple states, and (b) each party is likely to have a great financial and scientific investment on the line.⁵⁸

Further complicating the matter, individuals and private enterprises are under the jurisdiction of their respective nations and domestic laws, without any independent legal status under current international space law dispute settlement mechanisms.⁵⁹ Traditionally, international space law has applied only to sovereign states and inter-governmental organizations.⁶⁰

The need for outer space activities to operate within a unified legal framework is not a novel concept.⁶¹ In 1967 the United Nations adopted the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, commonly referred to as the Outer Space Treaty (OST).⁶² This treaty called upon states, and domestic entities for which those states are vicariously responsible, to explore outer space for peaceful purposes.⁶³ OST also stated that outer space shall be the jurisdiction of all mankind.⁶⁴ This essentially means that every state has a non-exclusive right to the *peaceful* use, study, and exploration of outer space.⁶⁵

Then, in 1972, in order to grant the OST more force and clarity under its article 6, the Claims Commission of the Convention on International Liability for Damage Caused by Space Objects (the Liability Convention)

⁵⁵ Cheng, *supra* note 20, at 167.

⁵⁶ *Id.*

⁵⁷ *Id.*

⁵⁸ Pocar, *supra* note 7, at 175.

⁵⁹ GOH, *supra* note 20, at 162.

⁶⁰ *Id.*

⁶¹ Listner, *supra* note 2.

⁶² See 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, 610 U.N.T.S. 205 [hereinafter Outer Space Treaty]; Benjamin Perlman, *Grounding U.S. Commercial Space Regulation in the Constitution*, 100 GEO. L.J. 929, 932 (2012).

⁶³ Outer Space Treaty, arts. 1, 6.

⁶⁴ *Id.*

⁶⁵ GOH, *supra* note 20, at 140.

entered into force.⁶⁶ This treaty held states liable for any “objects” they launched into space.⁶⁷ But the treaty failed to define what constitutes an object—for different purposes an object could perhaps be a satellite fragment or merely a paint chip.⁶⁸ Moreover, the Liability Convention is only to be invoked when: (1) states cannot resolve the dispute diplomatically; (2) the dispute arises out of an activity covered in the narrow OST provisions; and (3) the parties invoking the convention are *state* actors exclusively.⁶⁹ Additionally, the states must, by specific agreement, consent to be bound by the Liability Convention.⁷⁰ The Liability Convention only applies to states because international space law was originally created as an arm of public international law, and public international law applies only to sovereign states.⁷¹ The Liability Convention has never been called on to resolve a dispute, and the OST has only been invoked once, when a Russian satellite crashed in Canadian territory.⁷² That incident was resolved diplomatically with Russia agreeing to pay for the cost of cleaning up the radioactive debris from the crash scene.⁷³

Three other major international space law treaties besides the OST and the Liability Convention exist. These treaties provide for the safety and rescue of spacecraft and astronauts, the avoidance of injurious interference with the space environment and behaviors, and the report and registration of space activities.⁷⁴ But dispute resolution is not provided for in these treaties, and they do not apply to private actors.

Until the Outer Space Rules were adopted, no other international dispute resolution mechanism specifically addressed problems that involve outer space activities but arise outside the narrow confines of the Liability

⁶⁶ Perlman, *supra* note 62, at 934; Convention on International Liability for Damage Caused by Space Objects, Mar. 29, 1972, 24 U.S.T. 2389.

⁶⁷ Ryan Avent, *Tragedy of the Space Commons*, *ECONOMIST* (Aug. 23, 2010), http://www.economist.com/blogs/freeexchange/2010/08/property_rights.

⁶⁸ *Id.*

⁶⁹ Listner, *supra* note 2.

⁷⁰ Pocar, *supra* note 7, at 176.

⁷¹ *Id.*

⁷² Listner, *supra* note 2.

⁷³ Avent, *supra* note 67.

⁷⁴ *United Nations Treaties and Principles on Space Law*, U.N. OFFICE FOR OUTER SPACE AFFAIRS, <http://www.oosa.unvienna.org/oosa/en/SpaceLaw/treaties.html> (last visited Apr. 22, 2014). The three treaties are: The Agreement on the Rescue of Astronauts and the Return of Astronauts and the Return of Objects launched into Outer Space, Apr. 22, 1968, 19 U.S.T. 7570, T.I.A.S. No. 6599, 672 U.N.T.S. 119; the Convention on Registration of Objects Launched into Outer Space, Nov. 12, 1974, 28 U.S.T. 695, T.I.A.S. No. 8480, 1023 U.N.T.S. 15; and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 5, 1979, 1023 U.N.T.S. 15.

Convention.⁷⁵ Further, the other space law treaties lack guidance as to how to resolve complex disputes, and space-related organization instruments generally lack specificity in dealing with liability.⁷⁶ For example, while the ESA's founding convention provides for arbitration of disputes, this arbitration clause is narrow, as it only applies to disputes that relate to the ESA convention's interpretation or application.⁷⁷ Additionally, the International Telecommunications Union provides for arbitration within its documents, but this is available solely for specific subjects, like injurious interference to registered radio frequencies.⁷⁸ Finally, while states may turn to traditional systems of dispute resolution available in public international law, such as judicial mechanisms like the International Court of Justice (ICJ), these, again, do not apply to private parties.⁷⁹ Even systems that could be applied to private parties, like the UNCITRAL rules for general international commercial arbitration, share a common problem: none of them are tailored to the detailed and unique disputes that arise out of conduct concerning outer space.⁸⁰

With private companies now conducting expeditions into outer space, such as SpaceX's Dragon capsule mission,⁸¹ and viable plans for private firms to mine asteroids on the horizon, the applicable international law must be updated.⁸² Further, since the Outer Space Treaty defines outer space as a

⁷⁵ Listner, *supra* note 2.

⁷⁶ Pocar, *supra* note 7, at 176.

⁷⁷ Convention for the Establishment of a European Space Agency, art. XVII, May 30, 1975, 14 I.L.M. 864.

⁷⁸ Pocar, *supra* note 7, at 176; Constitution of the International Telecommunication Union, Dec. 22, 1992, 1825 U.N.T.S. 31251; Final Acts of the Additional plenipotentiary Conference, APP-92, at 71 (1992), available at <http://www.itu.int/pub/S-CONF-CTF-1992>; Optional Protocol on the Compulsory Settlement of Disputes Relating to the Constitution of the International Telecommunication Union, to the Convention of the International Telecommunication Union and to the Administrative Regulations (1992), available at <http://www.itu.int/net/about/basic-texts/optional-protocol.aspx>.

⁷⁹ Pocar, *supra* note 7, at 176.

⁸⁰ *See id.* at 177.

⁸¹ Tom Coughlin, *Private Space Transportation Reaching New Heights*, FORBES (July 7, 2012), <http://www.forbes.com/sites/tomcoughlin/2012/07/27/private-space-transportation-reaching-new-heights/>. SpaceX, located in Southern California, successfully launched and recovered the first private supply rocket to the ISS in May 2012, and it plans to create manned vehicles as an alternative to the Russian Soyuz spacecraft for human flights to the ISS. *Id.*

⁸² Frans von der Dunk, as told to Veronique Greenwood, *Lawyers in Space! The New Era of Spaceflight Needs Some New Rules*, DISCOVER (June 7, 2012), <http://blogs.discovermagazine.com/crux/2012/06/07/lawyers-in-space-the-new-era-of-spaceflight-needs-some-new-rules/>.

global commons, only international law can impose limitations on the autonomy to operate within this realm.⁸³

D. The Permanent Court of Arbitration and the Optional Rules for Arbitration of Disputes Relating to Outer Space Activities

1. About the Permanent Court of Arbitration

The PCA is an intergovernmental organization with 115 member states.⁸⁴ The PCA is a permanent mechanism for arbitral tribunals to resolve disputes.⁸⁵ Founded in 1899, the PCA was created to provide forms of dispute resolution, particularly arbitration, between states.⁸⁶ It now has evolved into an institution that allows states, state entities, intergovernmental organizations, and private parties to resolve their international legal disputes.⁸⁷ Among the disputes resolved via the PCA are commercial and investment disputes—which include both bilateral and unilateral investment treaties—human rights disputes between states, territorial issues, and treaty disputes.⁸⁸

The PCA is composed of three parts: “an Administrative Council that oversees its policies and budgets, a panel of independent potential arbitrators known as the Members of the Court, and its Secretariat, known as the International Bureau, headed by the Secretary-General.”⁸⁹ Each member state has the right to nominate up to four persons to the Members of the Court who are of “known competency in questions of international law, of the highest moral reputation and disposed to accept the duties of arbitrators.”⁹⁰ The PCA may aid in the selection of arbitrators and may be retained to either choose or act as appointing authority. In the last twenty years, the PCA has adopted eight, expert group-constructed sets of rules of procedure for arbitration that are “party and sector-specific.”⁹¹ In two

⁸³ *Id.*

⁸⁴ *About Us*, PERMANENT COURT OF ARBITRATION, http://www.pca-cpa.org/showpage.asp?pag_id=1027.

⁸⁵ *Structure*, PERMANENT COURT OF ARBITRATION, http://www.pca-cpa.org/showpage.asp?pag_id=1039.

⁸⁶ *About Us*, *supra* note 84.

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ *Structure*, *supra* note 85.

⁹⁰ *Members of the Court – Panel of Arbitrators*, PERMANENT COURT OF ARBITRATION, http://www.pca-cpa.org/showpage.asp?pag_id=1041.

⁹¹ Pocar, *supra* note 7, at 172.

instances, the PCA has provided for a specialized list of arbitrators who are upheld as experts in a specified area. These instances occurred with the creation of rules relating to resolution of environmental disputes, and for the Outer Space Rules.⁹²

2. *Advisory Group of Legal Experts*

In 2009, perceiving fundamental gaps in adequate mechanisms for the resolution of disputes arising from space-related activities, the Administrative Council of the PCA authorized the creation of an Advisory Group of legal experts.⁹³ First, the Advisory Group was granted a mandate to gauge the demand for an absolute and binding dispute settlement forum regarding the utilization of outer space by private, governmental, and intergovernmental entities.⁹⁴ In particular, the Advisory Group was to set forth the advantages and benefits of arbitration in this respect.⁹⁵ Next, the mandate asked that the Advisory Group draft optional rules regarding outer space disputes and the resolution thereof for the PCA to include in its set of arbitration rules.⁹⁶ The Advisory Group's focus was on: (1) pinpointing the pertinent features associated with outer space activities; (2) determining whether, given the nature of this area, dispute resolution could be effectively facilitated by arbitration; and (3) determining how to revise existing procedural rules for arbitration to fit the unique characteristics associated with disputes arising from outer space activities.⁹⁷

From this analysis, the Advisory Group determined that the following gaps in international space law needed to be filled. First, the Advisory Group determined that there was a need for a dispute resolution forum that would apply to state as well as non-state actors.⁹⁸ Second, they resolved that a forum to decide all disputes related to space activities, rather than only those falling under certain limited provisions of narrow treaties, was immediately necessary.⁹⁹ Third, even though private parties can resort to international commercial arbitration under UNCITRAL or rules under other

⁹² *Structure*, *supra* note 85; *Structure: Panel of Arbitrators and Experts for Space-related Disputes*, PERMANENT COURT OF ARBITRATION, http://www.pca-cpa.org/showpage.asp?pag_id=1039.

⁹³ Pocar, *supra* note 7, at 172.

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ *Id.*

⁹⁷ *Id.* at 174.

⁹⁸ *Id.* at 175.

⁹⁹ *See id.* at 176.

private arbitration institutions, a mechanism that specifically caters to the unique aspects of disputes arising from outer space activities is particularly worthwhile.¹⁰⁰ Given these modern aspects of space activities, the Advisory Group decided that an advantageous way to accommodate these needs would be to establish an international arbitration forum.¹⁰¹

Next, in accordance with the second prong of the mandate, the Advisory Group proceeded to draft the Outer Space Rules.¹⁰² In doing this, the Advisory Group heavily relied on the 2010 UNCITRAL Rules in addition to various sets of PCA procedural rules tailored for use by states, state agencies, and international organizations.¹⁰³ The UNCITRAL Rules, adopted in 1976, are well-established procedural arbitration rules that parties commonly use in international commercial arbitration matters.¹⁰⁴ These rules were selected as a model because they have stimulated more case law and academic scholarship than any other procedural arbitration rules mechanisms.¹⁰⁵ Since the Advisory Group departed from the UNCITRAL Rules when drafting the Outer Space Rules only when some distinctive characteristic of disputes related to space activities justified a divergence, a large degree of precedent in interpreting and applying the UNCITRAL Rules was preserved for the Outer Space Rules.¹⁰⁶ Thus, some predictability for parties using the Outer Space Rules was maintained.

The first complete draft of the Outer Space Rules was sent to the PCA member states in May 2011 for member states to respond to the Advisory Committee with their in-depth commentaries on the rules.¹⁰⁷ This enabled the Advisory Committee to ensure that the Outer Space Rules would conform to concerns expressed by states and international organizations. The Outer Space Rules were adopted by consensus by the Administrative Council of the PCA on December 6, 2011.¹⁰⁸

¹⁰⁰ *See id.* at 177.

¹⁰¹ *Id.*

¹⁰² *Id.*

¹⁰³ FABIO TRONCHETTI, FUNDAMENTALS OF SPACE LAW AND POLICY 55 (Joseph N. Pelton ed., 2013).

¹⁰⁴ Pocar, *supra* note 7, at 180.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ TRONCHETTI, *supra* note 103, at 55.

¹⁰⁸ Outer Space Rules, *supra* note 4.

3. *Outer Space Rules Provisions*

To start with, the Outer Space Rules are incredibly broad in scope, which counters the very narrow dominion possessed by previous international space law dispute resolution instruments.¹⁰⁹ To illustrate the broad application of the Outer Space Rules, Article 1(1) sets forth that “the characterization of the dispute as relating to outer space is not necessary for jurisdiction.”¹¹⁰ This provision therefore preempts the possibility that the parties could be prevented from settling disputes because of a factual, geographic, or technological ambiguity as to what qualifies as related to “outer space.”¹¹¹ All that parties must do in order for these rules to apply is consent to having the rules apply between them.¹¹² Further, the documents that must be provided in a Notice of Arbitration or a Response to the Notice of Arbitration may, under Articles 3(3)(d) and 4(1)(b), include a wide variety of instruments to which space disputes may be related, such as a “rule, decision, agreement, contract, convention, treaty, [or] constituent instrument of an organization or agency.”¹¹³ This language, while going beyond that of the UNCITRAL Rules, serves to advance the broadened scope of the Outer Space Rules by acknowledging that sources of law come from a diverse array of instruments.¹¹⁴

The Outer Space Rules take account of the fact that states are still major actors in outer space activities, even with the aforementioned entry of private parties. In Article 1(2), for example, the state is said to have waived immunity to jurisdiction when it agrees to arbitrate under these rules.¹¹⁵ This specifically dispenses with both state sovereign immunity issues and any intergovernmental organization jurisdictional immunity problems.¹¹⁶

Another matter the Outer Space Rules tackle is that of the probable technical and scientific complexity involved in outer space activities. To this end, the parties enjoy complete freedom to choose who will arbitrate their dispute, even if the person(s) chosen are not members of the PCA.¹¹⁷ However, to aid and facilitate the parties’ selection, the Outer Space Rules mandate in Article 10(4) that the Secretary-General of the PCA compile a

¹⁰⁹ TRONCHETTI, *supra* note 103, at 55.

¹¹⁰ Outer Space Rules, *supra* note 4.

¹¹¹ TRONCHETTI, *supra* note 103, at 56.

¹¹² Outer Space Rules, *supra* note 4, art. 1.

¹¹³ *Id.* arts. 3(3)(d), 4(3)(d); TRONCHETTI, *supra* note 103, at 56.

¹¹⁴ Pocar, *supra* note 7, at 182.

¹¹⁵ Outer Space Rules, *supra* note 4, art. 1(2).

¹¹⁶ Pocar, *supra* note 7, at 182.

¹¹⁷ Outer Space Rules, *supra* note 4, art. 10(4).

standing list of persons with expertise in space-related matters whom parties may choose to use as their informed decision-makers.¹¹⁸ These expert arbitrators are nominated by the PCA member states and recommended by the Secretary-General, taking into account feedback from and discussions with the legal community in the applicable fields.¹¹⁹ Additionally, under Article 29(7) of the Outer Space Rules the arbitral tribunal may bring in experts to support it in the decision-making process when it decides that supplemental technical or scientific insight is necessary.¹²⁰ The rules mandate that a list of scientific and technical experts be provided by the Secretary-General to assist the tribunal in selecting an expert for the matter at hand.¹²¹ However, the use of this expert list is optional, just like the use of the PCA's expressly-qualified standing arbitrators list. Moreover, the arbitral tribunal may call on the parties "to provide a non-technical document summarizing and explaining the background to any scientific, technical or other specialized information which the arbitral tribunal considers to be necessary to understand fully the matters in dispute."¹²² In this manner, these documents can serve to help the arbitral tribunal to understand the complex technical issues involved in the matter and decide whether bringing in experts to consult would be helpful in assessing the evidence.¹²³

Also addressed within the Outer Space Rules is the likely need for heightened and expanded confidentiality in space-related disputes. For example, Article 17(6) enables parties to indicate specific confidential information.¹²⁴ The arbitral tribunal will determine if the information the party deems confidential is actually confidential by determining whether "the absence of special measures of protection in the proceedings would be likely to cause serious harm to the party or parties invoking its confidentiality."¹²⁵ If this is the case, then the tribunal will direct the parties as to how to proceed with the confidential information and to whom to disclose it, and the tribunal will also require anyone to whom the confidential information is revealed to

¹¹⁸ *Id.*

¹¹⁹ Pocar, *supra* note 7, at 182.

¹²⁰ Outer Space Rules, *supra* note 4, art. 29(7).

¹²¹ Pocar, *supra* note 7, at 183.

¹²² Outer Space Rules, *supra* note 4, art. 27(4).

¹²³ Pocar, *supra* note 7, at 183.

¹²⁴ Giugi Carminati, *The Optional Rules for Arbitration of Disputes Relating to Outer Space Activities: A Comparison to the UNCITRAL Rules*, 1 INT'L L.J. L.A. CNTY. BAR ASS'N 1, 12-13 (2012), available at <http://www.lacba.org/Files/Main%20Folder/Sections/International%20Law/InternationalLawNewsletter/files/Carminati.pdf>.

¹²⁵ *Id.* at 13 (quoting Outer Space Rules, *supra* note 4, art. 17(6)).

sign a confidentiality undertaking.¹²⁶ These protections afford advantages to participants. For example, they encourage international arbitration by alleviating fears that a company's competitive advantage may be lost in the event of a dispute. The production of certain documents which will facilitate a fair and just resolution of a dispute will likely also be encouraged by these protections because they remove the risk to a company of its confidential technology and research becoming known to competitors.¹²⁷

Additionally, parties may ensure that the opposing party and the tribunal do not even see the confidential information. This is accomplished through Article 17(8), which allows the selection and implementation of a "confidentiality advisor."¹²⁸ The function of this advisor is to communicate with the tribunal on a particular matter on the basis of confidential information, without disclosing the confidential material of the document to the tribunal or another party.¹²⁹ The justifications for this confidentiality advisor system are two-fold. First, the confidentiality advisor is justified ethically because one party may have concerns that an arbitrator chosen by an opposing party may be unscrupulous and would leak confidential information he or she acquired.¹³⁰ This further encourages parties to be comfortable with engaging in a system of arbitration for space issues. Second, as a technical matter, the confidential content might be so technical that it would mean little to the arbitrators but would be significant to the advisor, who doubles as a technical expert.¹³¹ This would enable the advisor to assess the confidentiality of the highly technical content and be able to convey the relevant points to the arbitrators.

The Outer Space Rules also streamline resolution of party challenges to arbitrators for parties who did not have a prior agreement on the identity of an appointing authority. This is accomplished by Article 6(1), which gives the Secretary-General of the PCA broad appointing power.¹³² By this provision, the Secretary-General has the ability, upon a party's request, to appoint, replace, and decide challenges against arbitrators.¹³³ This is a different approach to the PCA Secretary-General's role than the UNCITRAL Rules. Under the UNCITRAL Rules, the Secretary-General is authorized

¹²⁶ *Id.* (citing Outer Space Rules, *supra* note 4, art. 17(7)).

¹²⁷ *Id.*

¹²⁸ Outer Space Rules, *supra* note 4, art. 17(8).

¹²⁹ TRONCHETTI, *supra* note 103, at 56.

¹³⁰ Pocar, *supra* note 7, at 183–84.

¹³¹ *Id.* at 183.

¹³² Outer Space Rules, *supra* note 4, art. 6(1).

¹³³ Pocar, *supra* note 7, at 184; Outer Space Rules, *supra* note 4, arts. 8(1), 9(2), 9(3), 10(3), 13(4), 14(1).

only to designate an appointing authority where the parties have agreed on none.¹³⁴ Thus, the Outer Space Rules, by naming the PCA Secretary-General as the actual appointing authority, reduces the potential for delays in selecting the tribunal and during later challenges to the selected arbitrators.¹³⁵

Moreover, the annex of the Outer Space Rules sets forth a model arbitration clause, which parties may include in treaties or other agreements to govern the resolution of their potential contract or relationship disputes.¹³⁶ Parties can also employ this model clause to provide for the arbitration of present disputes.¹³⁷

III. ANALYSIS

A. How International Arbitration, and Specifically These Outer Space Rules, Caters to the Unique Aspects of Space-related Disputes

As this Note discussed in Part II.B, Outer-space activities have undergone significant changes between the 1950s and the modern day due to an increase in the number and diversity of space-related actors and the advancement of technology. In light of these changes, international arbitration generally, and the Outer Space Rules specifically, provide many advantages for dispute resolution arising from space-related activities. Set forth below is a discussion of the benefits of international arbitration, followed by a discussion of the additional, specific advantages of the Outer Space Rules.

The first benefit of international arbitration in the area of outer space-related disputes, as discussed above, is that all parties who engage in activities related to space may have their disputes resolved through arbitration. This includes states, intergovernmental organizations, and private parties alike.

Second, arbitration is a mechanism that is based solely on the consent of the parties and is therefore completely voluntary.¹³⁸ Pre-dispute consent may be given through contract, treaty, or other legal instrument or agreement. Alternatively, the parties may agree to arbitration after a dispute arises. The optional nature of arbitration probably has the greatest appeal to states. States will often be more amenable to the prospect of agreeing to binding dispute resolution under isolated, customized agreements; rather than

¹³⁴ Pocar, *supra* note 7, at 184.

¹³⁵ *Id.*

¹³⁶ Outer Space Rules, *supra* note 4, at intro.

¹³⁷ *Id.* at annex.

¹³⁸ *Id.* art. 1.

accepting a new multilateral treaty mandating that all space-related grievances be handled in a specified manner, such as through the creation of an international court for space law or the addition of a chamber to the ICJ.¹³⁹ The treaty-creating process is exceedingly slow, treaties are difficult to draft in a manner that appeals to a broad range of states with different interests, and treaties are difficult to change once ratified. Parties are better served in efficiently achieving their goals and resolving matters quickly through executing individual, relationship-specific agreements providing for arbitration under the Outer Space Rules than in waiting around for an all-encompassing international regime to be developed.

Third, in contrast to the Liability Convention's resolutions—which are merely recommendations—arbitration provides a binding final decision to the parties.¹⁴⁰ Arbitration does not allow for appeals and may very rarely be challenged, and only under narrow justifications.¹⁴¹ Given the tight and exact time schedules that govern space activities—such as time windows for landing, atmospheric re-entry and descent, and orbital insertion—the fact that arbitration swiftly results in a final declaration is an important advantage to parties who are trying to keep to these rigid schedules.¹⁴²

Fourth, not only are arbitral awards recognized internationally, but all 149 signatory states of the Convention on the Recognition and Enforcement of Foreign Arbitral Awards must enforce international commercial arbitration awards, including major players in the space industry such as the United States, Russia, China, France, and the U.K.¹⁴³ This is in contrast to judicial awards, which do not have extraterritorial effect.¹⁴⁴

Fifth, parties may modify the procedure for arbitration, by agreement, to fit their evolving and specific needs.¹⁴⁵ This is especially advantageous in dealing with space activity disputes since the technology and discoveries in this area often advance before the law can catch up.¹⁴⁶

¹³⁹ TRONCHETTI, *supra* note 103, at 55.

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*; *Status 1958 – Convention on the Recognition and Enforcement of Foreign Arbitral Awards*, UNCITRAL, http://www.uncitral.org/uncitral/en/uncitral_texts/arbitration/NYConvention_status.html. See *The Convention on the Recognition and Enforcement of Arbitral Awards*, June 10, 1958, 21 U.S.T. 2517, 330 U.N.T.S. 38.

¹⁴⁴ GARY BORN & PETER B. RUTLEDGE, *INTERNATIONAL CIVIL LITIGATION IN U.S. COURTS* 1080 (4th ed. 2006) (noting the lack of a widely ratified multilateral convention on the enforcement of judicial awards).

¹⁴⁵ TRONCHETTI, *supra* note 103, at 55.

¹⁴⁶ Pocar, *supra* note 7, at 178.

Sixth, when arbitration is selected as the dispute resolution forum, parties may select their own expert decisionmakers. This is in contrast to a court where cases are assigned to a judge or judges who have legal expertise but might lack specialized knowledge in a particular field relevant to the dispute at hand.¹⁴⁷ Most space activities inherently involve both technical disciplines and complex social disciplines, like economics, as well as evidentiary or legal limitations (such as those surrounding remote sensing), which are not readily obvious to most adjudicators who lack proficiency in these specialized areas.¹⁴⁸

Seventh, sensitive information can remain confidential when arbitration is selected as the dispute resolution mechanism. Both hearings and awards can be kept private, which is crucial for space-related disputes dealing with information pertaining to, for example, technology—transactions and developments that potentially straddle the thin line between civil and military application.¹⁴⁹ This information may deal with national security interests, such as remote sensing imagery or novel technology that a party may not want revealed to potential competitors.¹⁵⁰

Finally, the PCA, owing to its intergovernmental organization status, extensive membership, and history of managing arbitration between states, is better adapted than any private institution to handle arbitrations comprising the broad variety of parties potentially involved in outer space-related activities.¹⁵¹

Many advantages to specifically employing the Outer Space Rules to cover space-related activities exist, above and beyond the advantages of using some regular, non-tailored arbitral rules procedure to resolve space-related disputes. First, an effective mechanism to resolve disputes arising from space-related conduct may produce a setting that encourages negotiation and development of international contracts or instruments dealing with outer space activities.¹⁵² Without the Outer Space Rules, the only means of international space-related dispute resolution with state parties rests primarily in diplomatic schemes, with the narrow exception set forth in the Liability Convention.¹⁵³ As is often the case when dealing with diplomatic resolutions, state's unequal bargaining power may lead to a

¹⁴⁷ *Id.* at 178–79.

¹⁴⁸ *Id.* at 179.

¹⁴⁹ *Id.*

¹⁵⁰ *Id.*

¹⁵¹ *Id.* at 184.

¹⁵² Listner, *supra* note 2.

¹⁵³ *Id.*

diminished chance of having a dispute decided equitably.¹⁵⁴ The Outer Space Rules could avoid this problem by providing an apolitical tribunal—one already equipped with experts—for states to resolve disputes arising from outer space activities.¹⁵⁵ As a result, states could be more likely to negotiate in treaties or smaller agreements a provision that specifies that the Outer Space Rules will be used to govern any disputes arising from their potential outer space-related disputes because they are confident that such issues will be resolved impartially.¹⁵⁶ Additionally, bolstering the appeal of an impartial tribunal is the fact that states (and any other parties) still retain significant input in the arbitration, such as through selecting the arbitrators, which allows states to feel protected from the risk of a biased tribunal.

Second, states are not the only parties who benefit in this way from the enactment of the Outer Space Rules. Private entities also receive assurance of impartial dispute resolution by subjecting international space-related contracts, such as those for satellite launches and operations, to arbitration under the outer space rules.¹⁵⁷

Third, the problem of space debris, an issue which has dramatically increased in importance since the start of the space age and constitutes a key focus for many disputes, may be solved more readily with the advent of the Outer Space Rules.¹⁵⁸ These rules may help hold parties accountable and determine liability in such instances, motivating parties to limit debris creation. Although space debris lacks a uniform international definition, it is usually defined as at least all man-made objects in orbit about the Earth, which no longer serve a useful function. Space debris largely comes from defective satellites, old rocket bodies, and the shrapnel resulting from the collision of these bodies.¹⁵⁹ As early as 1981 space debris began to be recognized, though at that time the count was estimated at merely 5,000 objects.¹⁶⁰ More than 20,000 orbital debris pieces at least as large as a

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *See id.*

¹⁵⁸ *Arbitration and Disputes Involving Outer Space*, LAZZAREFF LEBARS, <http://lazareff-lebars.com/1%E2%80%99arbitrage-international-et-les-litiges-implicant-1%E2%80%99espace/?lang=en> (last visited Apr. 23, 2014).

¹⁵⁹ *Orbital Debris Frequently Asked Questions*, NASA ORBITAL DEBRIS PROGRAM OFFICE (Mar. 2012), <http://orbitaldebris.jsc.nasa.gov/faqs.html#21>; Mike Wall, *Recent Satellite Crashes Bring Space Junk Problem into Public Eye*, SPACE (Jan. 12, 2012), <http://www.space.com/14217-space-junk-satellite-crashes-public-consciousness.html>.

¹⁶⁰ Sourabh Kaushal & Nishant Arora, *Space Debris and its Mitigation*, SPACEFUTURE, http://www.spacefuture.com/archive/space_debris_and_its_mitigation.shtml (last visited Apr. 23, 2014).

softball cloud around the Earth today, and space-faring states and entities must operate a surveillance network tracking all of these objects in order to prevent collisions.¹⁶¹ Even a small piece of debris traveling at speeds of up to 7.8 kilometers per second can destroy or disable a satellite if the two objects collide.¹⁶² The dangers associated with space debris are illustrated through the important military, intelligence, civilian, scientific, and environmental uses of outer space.¹⁶³ For example, satellites perform a variety of functions, such as carrying out military operations with precision-guided weapons, conducting surveillance of suspected atomic weapons development, increasing internet connectivity, assessing changes in sea level or arctic ice density, and forecasting hurricane trajectories.¹⁶⁴ Space technology has also increasingly been used to deliver medical information and aid to remote, rural areas so that a wider range of people across the world have access to medical information and diagnosis.¹⁶⁵ The increase in space debris is likely to obstruct these uses of outer space and make it difficult for satellites to operate without being destroyed, along with the investments that went into creating them. This problem has the potential to chill space investment, creating an imperative for the Outer Space Rules to effectively deal with this issue.

The Outer Space Rules may aid in holding parties accountable for their debris and in assessing conduct in outer space. Under the Liability Convention, every piece of space junk is still the responsibility of the nation that launched it (or the nation in which the company that launched it resides), and, as such, states are liable on a fault basis for any damage the debris inflicts on other objects in orbit.¹⁶⁶ In 2011, the ISS alone was involved in at

¹⁶¹ Wall, *supra* note 159.

¹⁶² SPACESECURITY.ORG, SPACE SECURITY INDEX 2012, EXECUTIVE SUMMARY 5 (2012), available at <http://swfound.org/media/83825/SSI-ExecSum-2012.pdf>.

¹⁶³ Micah Zenko, *A Code of Conduct for Outer Space, Policy Innovation Memorandum No. 10*, COUNCIL ON FOREIGN RELATIONS (Nov. 2011), <http://www.cfr.org/space/code-conduct-outer-space/p26556>.

¹⁶⁴ *Id.*

¹⁶⁵ *Fourth Committee Concludes Outer Space Debate, Spotlighting Arena's Growing Role in Economic Development, Disaster Mitigation, Information Management*, Sixty-seventh GA, GA/SPD/512 (Oct. 19, 2012), available at <http://www.un.org/News/Press/docs/2012/gaspd512.doc.htm>.

¹⁶⁶ Von der Dunk, *supra* note 82; Michael Listner, *Legal Events/Issues Affecting Outer Space Security 2011–2012*, SECURE WORLD FOUNDATION, available at http://swfound.org/media/86339/legal%20aspects%20of%20outer%20space%20security_listner.pdf (last visited Mar. 23, 2014).

least four near-collision incidents.¹⁶⁷ These incidents raise many questions about the application of a fault standard of liability in ways that were not yet implicated during the start of the space age. How can fault be determined in outer space? How does fault apply to non-state actors? How does a party know what nation or entity a piece of debris belongs to? If a piece of space debris collides with international property, such as the ISS, who is liable and to whom? These areas are where the Outer Space Rules could help interpret and fortify the Liability Convention principles, while taking account of modern realities by determining appropriate measures of fault and relief, given the diverse parties, circumstances, technology, and any existing contracts or treaties at play in the incident. Additionally, as mentioned above, under the Outer Space Rules system, both liability and recovery may be apportioned to non-state as well as state actors in regards to their space activities.

Fourth, and related to space debris, is the issue that no legal provisions exist for when an object is effectively “abandoned” in space. This is in contrast with the law of the high seas, where rules are in place so that an entity can salvage debris or remove it without breaching ownership rights.¹⁶⁸ So even though a space object, like a satellite or a fragment of a rocket, may no longer be functioning, it is not assumed to be abandoned by the nation that launched it, and therefore it may not be interfered with absent consent from the launching nation.¹⁶⁹ Removing defunct satellites could involve the use of processes that physically remove the space object to a different orbit out of the way of active orbiting objects, or to an unstable orbit that would guarantee the quick destruction of the object.¹⁷⁰ This type of removal would require an in-depth knowledge of the spacecraft and object so that the removal effort would not create additional fragmentation and debris.¹⁷¹ It follows that this type of process would likely entail the disclosure of technical details about the space object. Therefore, the negotiation of

¹⁶⁷ Listner, *supra* note 166. The four events were as follows: (1) fragments of the Russian Cosmos 2251 approached the ISS on April 2, 2011 and the ISS executed a Collision Avoidance Maneuver; (2) debris supposedly from Proton ullage motor breakup advanced toward the ISS on June 28, 2011 and the ISS crew retreated to the Soyuz return vehicle due to an insufficient amount of time for a maneuver; (3) fragmentation debris from Cosmos 375 (ASAT) loomed near on July 11, 2011, but a maneuver was ultimately not necessary; and (4) on September 29, 2011 debris from the Russian Tsyklon rocket body approached and the ISS executed a Collision Avoidance Maneuver.

¹⁶⁸ Michael Listner, *Legal Issues Surrounding Space Debris Remediation*, SPACE REVIEW (Aug. 6, 2012), <http://www.thespacereview.com/article/2130/1>.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.*

licensing, confidentiality, and nondisclosure agreements between the owners and the salvagers of the derelict satellites or objects would have to take place to protect the intellectual property rights of the owners.¹⁷² The Outer Space Rules may be useful in this situation for two reasons. Firstly, they provide a model clause to include in party contracts that involve outer space activities, which can aid parties in negotiations and in drafting contracts to better anticipate liability allocation and substantive law application. Secondly, the parties will probably be willing to provide for any dispute that may arise to be arbitrated through the Outer Space Rules because their confidential information will remain protected and the dispute will be adjudicated before a group of experts in the area.

Fifth, as this Note described in Part II.D.3, specialty arbitral safeguards, beyond those standard in most arbitral systems, are provided for in the Outer Space Rules. For example, the rules provide for the appointment of a confidentiality advisor in appropriate circumstances, providing heightened protections on party information. Additionally, the PCA's lists of space-related specialists who can serve as experts and arbitrators help parties secure the most competent tribunal and arbitration process possible to resolve their especially complex disputes. Having pre-determined lists of such qualified individuals also promotes efficiency and timeliness in the arbitral process.

Finally, the international community is working to develop an optional Code of Conduct for outer space activities.¹⁷³ The Outer Space Rules may be used to augment this code or other similar best practice guides. For example, parties may agree to follow this new code in a contract and also provide for arbitration under the Outer Space Rules. In such instances the arbitration panel can consider the code requirements in assessing a binding dispute resolution.

B. Potential Drawbacks to the Outer Space Rules and Why These Rules are Still the Best Available Option in Spite of These Possible Drawbacks

Concerns, however, exist over the effectiveness of the Outer Space Rules. For example, the rules may only be implemented if parties expressly consent to be bound by them, which could render the Outer Space Rules ineffective and inconsistent if all or most parties do not consent to have their disputes governed in this fashion. While this concern could ring true if parties do not

¹⁷² *Id.*

¹⁷³ *EU Launches Negotiations on an International Code of Conduct for Outer Space Activities*, E.U. Press Release, A 252/12 (June 6, 2012), available at http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/EN/foraff/130649.pdf.

embrace this dispute resolution mechanism, the benefits, flexibility, and security they offer to all outer space activity actors make widespread rejection unlikely. In dealing with activities related to outer space, the stakes—temporal, monetary, security, informational, reputational, environmental—are too high to risk not having a tailored dispute resolution forum and procedure that will produce an informed, confidential, and internationally enforceable result. The Outer Space Rules meet all of those needs.

IV. CONCLUSION

The Outer Space Rules developed in response to the void in outer space law. Other processes of resolving disputes related to outer space activities, such as the Liability Convention, are exceptionally narrow in scope and application. While the Liability Convention may have sufficed to regulate outer space activities in the 1970s, when the only actors involved in space activities were states (or governmental organizations), the activities and players in outer space have dramatically changed and are continuing to evolve. Given the high demand for dispute resolution that will likely arise as these changes proceed and develop, arbitration under the Outer Space Rules provides the most effective and capable forum to address these issues.

For one, the Outer Space Rules are available to a wide range of public and private parties including states, international organizations, corporations, and individuals. Additionally, while this forum is available to all sorts of parties, it is voluntary and rests on the consent of the parties to elect to have their dispute governed by the Outer Space Rules. This quality is attractive to states because they are far more likely to feel comfortable entering into discreet agreements that provide for the use of the Outer Space Rules to resolve disputes, rather than signing a sweeping multilateral treaty that provides that in all instances that ever arise, the state will be bound by one particular mechanism and will have to treat each dispute in the same manner.

Also of import is the fact that arbitration can be kept private to safeguard the confidentiality of the parties, and the Outer Space Rules provide for a confidentiality advisor so that confidential information is even protected from the adverse party and arbitrators. This is advantageous in multiple regards. It caters to the unique qualities of outer space activities, which tend to involve highly technical devices with large amounts of money at stake, by allowing for the preservation of confidential information from potential competitors in the market. The Outer Space Rules also provide a trustworthy forum to augment potential international rules and standards of best practice

for the use of outer space, since the rules allow arbitrators, when resolving disputes, to measure party conduct against the standards set forth in party agreements. Such augmentation must be developed in light of all of the changes that have occurred over the last sixty years.

Given the vital role outer space plays in modern life and its variety of uses, a specific dispute-resolution mechanism catering to its unique features is important. The Outer Space Rules are the best mechanism to rise to this challenge and safeguard all party interests.