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Space Station Asgardia 2117: From Theoretical Science to a New Nation in Outer Space

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ABSTRACT:

The newly proposed nation-state known as Asgardia is a concept with one purpose. The proponents aim at gaining full recognition of the United Nations. While this may be equated with a chimera originating in science fiction stories, the idea is being seriously developed with fascinating repercussions to the future of international space law. Asgardia is expected to be a space station and a city-state. The space kingdom of Asgardia offers citizenship to all human beings willing to assent to its Declaration, and to abide by its Constitution. While this article addresses the background of this project, it also addresses two main international law issues applicable to this novel concept. Asgardia will have two significant challenges to overcome. The first one will be technological. The second one will be legal. This legal challenge will depend on two additional considerations: space activities and state recognition.

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“I’ve seen things you people wouldn’t believe: attack ships on fire off the shoulder of Orion. I’ve watched C-beams glitter in the dark near the Tannhauser Gate. All those... moments... will be lost... in time, like... tears... in rain.”¹

— Roy Batty

¹ Roy Batty is a fictional character from the original 1968 novel titled *Do Androids Dream of Electric Sheep?* The story was the basis for *Blade Runner* (1982), considered one of the greatest sci-fi films of all time. PHILIP K. DICK, *DO ANDROIDS DREAM OF ELECTRIC SHEEP?* (Del Rey 1996) (1968). See *Biography for Roy Batty*, IMDB, <http://www.imdb.com/character/ch0002845/bio> (last visited Dec. 21, 2017). See also, *Blade Runner*, IMDB, <http://www.imdb.com/title/tt0083658/> (last visited Dec. 21, 2017).

I. POINTS OF DEPARTURE

When human beings look up toward the sky and reflect on new possibilities, there is this grandiose idea that occupies them: the exploration of outer space. This endeavor, in reality, demands humility of those that engage in it. This journey into the expanse provides a sense of wonder and a sense of adventure. This adventure has been the story of humanity's entry into outer space.

The concept of space travel began to take shape in modern times when the necessary technical and technological capabilities became available. The first sign of what would eventually become the beginning of that story could be sensed in the novel written by Jules Verne, *From the Earth to the Moon* in 1865.² A few years later, the concept of future space exploration took additional meaning when, in 1869, Edward Everett Hale published a story called *The Brick Moon* in the *Atlantic Monthly*.³ The story was significant because it was the first conception of an orbiting navigational aid (satellite).⁴ Even more compelling, Hale noted that this object had people onboard, making it also the first story of a space station.⁵ Later, we encountered the double-wheeled space station from Stanley Kubrick's *2001: A Space Odyssey*, adapted from the novel by Arthur C. Clarke.⁶

The newly proposed space station Asgardia reminds one of a chimera originating in one of those science fiction stories.⁷ But how do we distinguish between Asgardia, on the one hand, and those extraordinary visions that brought the glittering c-beams and the conflict of the Tannhauser Gate?⁸ Asgardia will be more than a simple space station. It will be, in essence, a

² JULES VERNE, *FROM THE EARTH TO THE MOON: DIRECT IN NINETY-SEVEN HOURS AND TWENTY MINUTES: AND A TRIP ROUND IT* (1890).

³ *Miscellaneous Front Pages*, 24 *ATLANTIC MONTHLY*, no. 141, July 1869, at i, <http://ebooks.library.cornell.edu/cgi/t/text/pageviewer-idx?c=atla;cc=atla;rgn=full%20text;idno=atla0024-1;didno=atla0024-1;view=image;seq=00005;node=atla0024-1%3A1>.

⁴ Adam Mann, *Strange Forgotten Space Station Concepts That Never Flew*, *WIRED* (Jan. 24, 2012, 6:31 AM), <https://www.wired.com/2012/01/space-station-concepts/>.

⁵ *Id.*

⁶ ARTHUR C. CLARKE, *2001: A SPACE ODYSSEY* (1968).

⁷ Rob Coppinger, *Asgardia, Proposed Space-Based Nation Accepting Citizenship Applications*, *SPACE.COM* (Oct. 14, 2016, 7:30 AM), <http://www.space.com/34386-asgardia-space-nation-accepting-citizenship-applications.html>.

⁸ *See generally* TIMOTHY SHANAHAN, *PHILOSOPHY AND BLADE RUNNER* (2014).

city-state. Could it become the Athens of outer space? It is entirely possible; science fiction has never been that far ahead of our reality. This was proven when astronaut Scott Carpenter of Project Mercury donned his prototype NASA full-pressure suit on November 27, 1959, less than one hundred years after Verne's novel.⁹ The window into that world of wonder got wider when astronaut John Glenn Jr. boarded the Friendship 7 capsule on February 20, 1962, becoming the first American to orbit our planet.¹⁰ Later in 1973, with the construction and launch of *Skylab*, America's first space station, humanity once again wondered about new possibilities.¹¹

Progress was also made on the Soviet side when a series of Soviet space stations known as Salyut, ending with Salyut 7, launched in the 1970s.¹² The stations were the predecessors of Mir.¹³ Indeed, Mir was the next step in space station development.¹⁴ Its main module was launched on February 20, 1986.¹⁵ That station, with a core module for living quarters and six docking ports, was also open for international use.¹⁶

Shortly before this time, the next chapter of the science fiction saga had begun with the release of *2010: Odyssey Two*, in which humanity ventured toward Jupiter.¹⁷ That is indeed the final frontier: to go and explore within our solar system and beyond. If we are to succeed, then the proper space station would be a necessary point of departure for distant destinations. In another step towards achieving this dream, the space shuttle Atlantis successfully docked with Mir on June 29, 1995, two days after Atlantis was launched from the Kennedy Space

⁹ *A Space History Sampler: Take a Look Back at the History of Space Travel and the U.S. Space Shuttle Program*, WALL ST. J. (Updated July 8, 2011 1:38PM ET), <https://www.wsj.com/articles/SB10001424052702303365804576430340428409676>.

¹⁰ *Great Moments in NASA History*, WALL ST. J. (Updated May 18, 2012 12:47PM ET), <https://www.wsj.com/articles/SB10001424052702303360504577410560937698228>.

¹¹ *Id.*

¹² Michael Carroll & Andrew Chaikin, *Our Man-made Moons*, 252:5 POPULAR SCI. 100, 100-02 (1998).

¹³ *Id.*

¹⁴ *Id.*

¹⁵ *MIR FAQs—Facts and History*, EUROPEAN SPACE AGENCY (Feb. 21, 2001), http://www.esa.int/About_Us/Welcome_to_ESA/Mir_FAQs_-_Facts_and_history.

¹⁶ *Id.*

¹⁷ ARTHUR C. CLARKE, *2010: ODYSSEY TWO* (Del Rey 1984) (1982).

Center.¹⁸ Eventually, Mir was decommissioned after a fruitful lifespan of thirteen years.¹⁹ The last cosmonauts that occupied the station left in 1999.²⁰ At the same time, a new chapter in the story of space stations was about to begin.

The next generation of space stations was the International Space Station (ISS). This new celestial abode occupies a place at 250 miles above planet Earth, while orbiting at over 17,500 miles per hour.²¹ The ISS was to be constructed with the “resources and scientific expertise of 16 nations [becoming] the most ambitious scientific and technical project in history.”²² The development of the station became a historic step for international space law, when “senior government officials from 15 countries met in Washington to sign the Inter-Governmental Agreement on Space Station Cooperation, which established a framework for cooperation on the station’s design, development, operation, and utilization.”²³ The station dimensions were impressive: the station was to be “the length of a U.S. football field, including the end zones” and contained living space almost equal to one and half Boeing 747 jetliners.²⁴ In 1993, the U.S. invited Russia to join the ISS project, and in the process, it contributed experience and valuable Proton and Soyuz rockets for supply runs and crew transport.²⁵ On November 20, 1998, the first step was taken when a Russian Proton rocket carried the Zaria module (Russian for “dawn”), becoming the first component of the station.²⁶

This story of human travel to the stars now has a next step in its evolution or rather a new beginning with the proposed construction of the space station Asgardia. Humanity now has an opportunity to reach farther into the stars. While a potentially dangerous endeavor, outer space “is worth the

¹⁸ Kaylie Duffy, *Today in Engineering History: U.S. Space Shuttle Docks with Russian Space Station*, PRODUCT DESIGN & DEV. BLOG (June 29, 2015, 12:38 PM), <https://www.pddnet.com/blog/2015/06/today-engineering-history-us-space-shuttle-docks-russian-space-station>.

¹⁹ *An Era in Space History Came to an End as the Space Station Mir was Abandoned*, CTV NAT’L NEWS (August 27, 1999).

²⁰ *Id.*

²¹ Daniel S. Goldin, *Human Quest: The International Space Station and Mars Exploration*, 21:2 Harv. Int’l L. Rev. 1 26, 26-28 (March 22, 1999).

²² *Id.*

²³ *Id.*

²⁴ *Facts about the International Space Station, Which Turns 10 Years Old This Week*, CANADIAN PRESS (Oct. 31, 2010).

²⁵ Staff Writers, *Ten Years in Space: The International Space Station*, UPI SPACE DAILY (Nov. 19, 2008).

²⁶ *Id.*

benefit. The answer is an unequivocal yes, but not only for the reasons that are usually touted,” such as exploration, potential scientific discoveries, and commercial profit.²⁷ But the most compelling reason centers of the need to understand how the utilization of space will aid in protecting Earth to guarantee human survival.²⁸

II. ASGARDIAN CITY-STATE

A. *What is Asgardia?*

Not too long ago, on October 12, 2016, the beginning of a new project called Asgardia was announced.²⁹ This project gave form to an idea: a city-state. This meant the establishment of a new and independent nation in outer space.³⁰ Humanity was invited to join this endeavor as new citizens, while its founders planned to apply for its recognition with the United Nations.³¹ In an interview with Business Insider, Dr. Ram Jakhu, director of the Institute of Air and Space Law at McGill University and one of Asgardia’s founding project members, noted that “we must leave [Earth] because it’s very much in the nature of humanity.”³² In the same interview, Jakhu made two thought-provoking statements: “the resources of Earth will be depleted... and [humanity has] a wish to go where nobody has gone before.”³³

It is a noble concept. The space kingdom of Asgardia offers citizenship to all human beings willing to assent to its Declaration, and to abide by the Constitution and the legislation

²⁷ William E. Burrows, *Space and Civilization*, WALL ST. J. (Updated Feb. 3, 2003 12:01AM ET), <https://www.wsj.com/articles/SB1044239185574792064>.

²⁸ *Id.*

²⁹ See ASGARDIA: THE SPACE KINGDOM (2017), <https://asgardia.space/en/word>.

³⁰ Eric Mack, ‘Asgardia,’ the first First nation in space, wants you!, CNET (Oct. 2, 2016), <https://www.cnet.com/news/asgardia-will-be-a-new-nation-in-space-and-you-can-be-a-citizen/>.

³¹ Daniel Clery, *Space Oddity: Group claims to have created nation in space*, SCIENCE (Oct. 12, 2016), <http://www.sciencemag.org/news/2016/10/space-oddity-group-claims-have-created-nation-space>.

³² Dave Mosher, *A multinational group wants you to join 'Asgardia' — the first outer space nation with a mission to defend Earth*, BUS. INSIDER AUSTL. (Oct. 13, 2016), <https://www.businessinsider.com.au/asgardia-space-nation-law-2016-10?r=US&IR=T>.

³³ *Id.*

of Asgardia.³⁴ The Asgardian Constitution states that “[a]ll citizens of Asgardia are equal, irrespective of their Earthly country of origin, residence, citizenship, race, nationality, gender, religion, language, financial standing, or any other attribute.”³⁵

The name *Asgardia* was chosen with a Norse mythological orientation, embodying one of the nine worlds of Norse mythology inhabited by the gods.³⁶ This romantic notion is tied to ideals that it enshrines—as expected—in accordance with the values contained in outer space law. These *Supreme Values*, as embodied in Article 4(4) of the Asgardian Constitution, note in relevant part its mission of:

- peace in space and peaceful settlement of the Universe;
- ensuring equality of opportunity in space for all Asgardian citizens;
- safeguarding all of humanity from space-originating threats; [and]
- unity of space humanity as a community.³⁷

It was decided that Asgardia would “establish a physical presence in space via a series of satellites, the first of which would be the Asgardia-1.”³⁸ It has been suggested that “Asgardia has the benefit of the internet to organize its claim to existence and perhaps raise funds for the satellite that would give it a physical territory in the universe and some basic utility for its ‘citizens’ to rally around.”³⁹

Indeed, Asgardia was founded to be free to decide its own destiny. But this suggested that the Asgardian space-nation would be “independent of countries on Earth,” and not bound to the outer space law in which governments “authorize and supervise space programmes run from their own [territories]

³⁴ See Constitution of the Space Kingdom of Asgardia, Declaration of Unity of Asgardia, 2018, ch. 1, ¶ 4 [hereinafter Asgardian Constitution]; see also *Constitution of the Space Kingdom of Asgardia*, ASGARDIA: THE SPACE KINGDOM (18 JUNE 2017), <https://asgardia.space/en/page/constitution>.

³⁵ *Id.*

³⁶ *Id.*

³⁷ *Id.*

³⁸ Andrea Lo, *Asgardia: The World's First Space Nation*, CNN (June 20, 2017), <http://edition.cnn.com/style/article/asgardia-nation-in-space/index.html>.

³⁹ Mack, *supra* note 30.

even if they are commercial.”⁴⁰ This is not to say that Asgardia is free to ignore outer space law. The United Nations may grant Asgardia the status it seeks; however, it must first manage to meet the tests and processes presented in this article.

B. Challenges Facing Asgardia

Asgardia will have two significant challenges to overcome. The first one will be technological. The second one will be legal. This legal challenge will depend on two additional considerations: space activities and state recognition.

One day the first Asgardian citizen will “turn on” the lights of the city. Whatever their struggles and challenges, even if enormous at the very beginning, with time they will be overcome and eventually be forgotten, like tears in rain.⁴¹ In time, Asgardia will shine against the darkness and vast distances of outer space. This new creation should endure, and will endure, if the activities related to it are conducted in peace and for the benefit of humanity, and in accordance with the United Nations Charter.⁴² Once accepted as a nation, and due to the nature of its location, it will be immediately confronted by the responsibilities associated with international space law. While the use of outer space is now rapidly evolving and the potential evolution of technology is pushing the boundaries of space law interpretation, nevertheless, it is still a highly important consideration.

A point of departure, then, would be to consider what will be needed for the success of the Asgardian project. The strongest guidelines for the establishment of a city-state in outer space must begin with the space law treaties. However, it would be relevant to first consider some of the technological challenges associated with this endeavor.

1. Astrodynamics and Physiology

The construction of a space station is a major undertaking. It would be helpful to think of a station having similar positioning needs as a satellite, and thus, to find the

⁴⁰ Sarah Knapton, *Scientists Propose Space Nation Named ‘Asgardia’ and Cosmic Shield to Protect Earth from Asteroids*, TELEGRAPH (Oct. 12, 2016), <http://www.telegraph.co.uk/science/2016/10/12/scientists-propose-space-nation-named-asgardia-and-cosmic-shield/>.

⁴¹ Roy Batty commonly used this phrase in *Blade Runner*.

⁴² United Nations, *Charter of the United Nations*, 24 Oct. 1945, 1 UNTS XVI.

ideal velocity and location in orbit for its safe operation. These needs would be determined by a combined calculation of “range, azimuth, elevation, rates of each variable, times of each observation, and site location.”⁴³ The considerations of a space station will take its designers into the ambit of astrodynamics, or, in other words, “the study of the motion of man-made objects in space, subject to both natural and artificially induced forces.”⁴⁴ Designers may face challenges of uncertainty that would require mathematical tools to aid in orbit estimation within astrodynamics.⁴⁵

The double-wheeled station concept from *2001: A Space Odyssey* was more than a dream. In the story and movie, we learn of the suborbital vehicle—a PanAm shuttle—approaching the station.⁴⁶ It also serves as a launching point for missions into deep space.⁴⁷ It is worth mentioning that *2001: A Space Odyssey* was released in theaters one year before the landing of Apollo 11 on the moon.⁴⁸ The *2001* story served as a reminder about the difficulties of living in a zero-gravity environment.⁴⁹ Equally challenging is the effect of outer space on the human body. Accidental exposure would be devastating to the poor Asgardian imperiled in that harsh environment. A sudden exposure to the vacuum of space would cause lung rupture, while liquid water in the bloodstream and soft tissues would turn into water vapor.⁵⁰ Fortunately or unfortunately, the individual would become unconscious and death would follow a minute later.⁵¹ Even without an accident, long-term exposure of

⁴³ DAVID A. VALLADO, *FUNDAMENTALS OF ASTRODYNAMICS AND APPLICATIONS* 426 (Microcosm Press, 4th ed. 2013).

⁴⁴ *Id.* at 1.

⁴⁵ Ellen Goldbaum, *Avoiding Outer-Space Collisions is Focus of Air Force-Funded Research by UB's Puneet Single*, TARGETED NEWS SERV. (Apr. 21, 2011).

⁴⁶ David Newnham, *2001: A Space Odyssey - The reality*, GUARDIAN (Jan. 6, 2001), <https://www.theguardian.com/science/2001/jan/06/spaceexploration.weekend.magazine1>.

⁴⁷ *Id.*

⁴⁸ Margaret Rhodes, *The Amazingly Accurate Futurism of 2001: A Space Odyssey*, WIRED (Aug. 19, 2015), <https://www.wired.com/2015/08/amazingly-accurate-futurism-2001-space-odyssey/>.

⁴⁹ Roxanne Palmer, *A scientific fact-check of 2001: A Space Odyssey*, WEEK (July 23, 2014), <http://theweek.com/articles/445367/scientific-factcheck-2001-space-odyssey>.

⁵⁰ Mark Springel, *The Human Body in Space: Distinguishing Fact from Fiction*, HARV. UNIV.: SCI. IN THE NEWS BLOG (July 30, 2013), <http://sitn.hms.harvard.edu/flash/2013/space-human-body/>.

⁵¹ *Id.*

the human body to a microgravity environment can cause muscle atrophy (50% muscle mass loss), space motion sickness, and abnormal sleep cycles.⁵²

But a new space station will go beyond science fiction and into the realm of space-based industries for development of new technologies and investment. Ironically, the idea of wheels or cylinders for space station design originated with NASA.⁵³ In the 1970s, NASA scientists explored that idea, and just like in those days, the incentive continues to be the same: “to create new lands for population expansion, to ensure the survival of humanity in case of global disaster and to create wealth by exploiting space resources.”⁵⁴ Will it be possible to start construction of the proposed new station Asgardia? That question would have to be answered in the positive, especially if humanity learns a lesson or two from the sci-fi concepts. Manfred Lachs notes that expansion of State activity brought their law into new areas, and with these, international law acquired new dimensions.⁵⁵ “It has followed man throughout his journey in time and space, for this is its function and destiny as reflected by history.”⁵⁶ Hopefully in the years that follow, we will observe vehicles like *SpaceShipTwo* traveling from spaceports on Earth transporting passengers to Asgardia.⁵⁷

The latest of the sci-fi conceptions was demonstrated with the specifications of *Cooper Station* in the 2014 motion picture *Interstellar*.⁵⁸ The story considered the challenges of constructing a series of space stations in the vicinity of Saturn to save humanity, including the challenges associated with the quantum gravity laws.⁵⁹ Cooper Station had a striking similarity to the Bernal sphere, a design idea for a potential space station proposed in 1929 by John Desmond Bernal, which was considered by a summer study program held by NASA in 1975, and later expanded in 1976 by Gerard K. O’Neill, in his book titled *The High Frontier: Human Colonies in Space*.⁶⁰ To

⁵² *Id.*

⁵³ Karl Tate, *A Village in Orbit: Inside NASA's Space Colony Concepts*, SPACE.COM (Aug. 5, 2013), <http://www.space.com/22228-space-station-colony-concepts-explained-infographic.html>.

⁵⁴ *Id.*

⁵⁵ MANFRED LACHS, *THE LAW OF OUTER SPACE: AN EXPERIENCE IN CONTEMPORARY LAW-MAKING* 12 (1972).

⁵⁶ *Id.*

⁵⁷ ERIK SEEDHOUSE, *SUBORBITAL: INDUSTRY AT THE EDGE OF SPACE* 15 (2014).

⁵⁸ KIP THORNE, *THE SCIENCE OF INTERSTELLAR* 273 (2014).

⁵⁹ *Id.* at 212.

⁶⁰ Adam Hadhazy, *How We Could Actually Build a Space Colony*, POPULAR MECHANICS (Oct. 2, 2014), <http://www.popularmechanics.com/space/deep->

these technical challenges, another must be added by necessity. How will Asgardia be recognized legally by the international community?

2. *Recognition of Territorial Legal Status*

The preamble of the Outer Space Treaty recognizes “the common interest of all mankind” in the exploration and use of outer space for “the benefit of all peoples” and in the spirit of cooperation and mutual understanding.⁶¹ Could the Outer Space Treaty drafters have anticipated the new commercial industry that would be developed? Perhaps yes or perhaps no. It would be accurate to affirm that these drafters had sufficient foresight in the uses of outer space and the ramifications for the future of humanity. The idea of what would become the law applicable to space stations can be traced back to the U.N. General Assembly when, in 1958, it adopted its first resolution specifically concerned with outer space.⁶² The same principles enshrined in it can still be found today in Resolution 71/90, the latest resolution regarding the use of outer space.⁶³ However, three items have become relevant for the discussion of space stations. First, the history of space law has always been one that emphasizes the common interest of all nations, and the Resolution’s preamble emphasizes the relevance of “the common interest of all humankind in promoting and expanding the exploration and use of outer space.”⁶⁴ Secondly, the Resolution reaffirms the necessity of international cooperation, and lastly, it warns against the possibility of an arms race in outer space.⁶⁵

International space law exists within the general rules of international law as delineated in Article 38 of the Statute of the International Court of Justice (ICJ).⁶⁶ Article 38, sections (a), (b) and (c) include authoritative sources that describe this law

space/a11351/how-we-could-actually-build-a-space-colony-17268252/. See also, GERARD K. O’NEILL, *THE HIGH FRONTIER: HUMAN COLONIES IN SPACE* (William Morrow & Co. 1976).

⁶¹ Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, Preamble, *opened for signature* Jan. 27, 1967, 18 U.S.T. 2410, 610 U.N.T.S. 205, [hereinafter Outer Space Treaty].

⁶² G.A. Res. 1348 (XIII), Question of the Peaceful Use of Outer Space (Dec. 13, 1958).

⁶³ G.A. Res. 71/90, International cooperation in the peaceful uses of outer space (Dec. 22, 2016).

⁶⁴ *Id.*

⁶⁵ *Id.*

⁶⁶ Statute of the I.C.J. art. 38, ¶ 1.

with binding standards reflected in treaties and customary law.⁶⁷ Sections (a) and (b) are supported by the third: the general principles of law (common to *national* legal systems) that have been “generally accepted as to be no longer directly connected with State practice.”⁶⁸ Those are supported by Article 38, section (1)(d), which provides that the only evidence of international law from which the law may be determined is through (1) the examination of judicial decisions and (2) the teachings of the “most highly qualified publicists.”⁶⁹

Within the ICJ’s mandate, there is no provision to make international law; however, the mandate appropriately applies existing law to the issues brought before it.⁷⁰ For this reason, its decisions carry significant weight, being “widely considered to be highly authoritative statements regarding (interpretations of) international law by international and national courts, various States, and international organizations.”⁷¹ Regarding the “most highly qualified publicists,” Jakhu and Freeland note that “a cursory examination indicates that person to be classified in this category must not only be qualified but most highly publicized.”⁷² Additionally, *soft law* instruments provide further guidance regarding rules of conduct that do not emanate from the traditional sources found in Article 38 of the ICJ Statute.⁷³

Manfred Lachs observed that other sources existed due to regulatory *lacunae* in space law where *soft law* instruments continued to offer needed guidance beyond the traditional sources found in Article 38 of the ICJ Statute.⁷⁴ For example, Jakhu and Freeland listed in particular the resolutions of the UN General Assembly and Security Council.⁷⁵ The most significant were:

⁶⁷ ANTONIO CASSESE, INTERNATIONAL LAW 153, 170 (Oxford Univ. Press 2nd ed. 2005).

⁶⁸ *Id.* at 188. See also JAMES CRAWFORD, BROWNLIE’S PRINCIPLES OF PUBLIC INTERNATIONAL LAW 21-37 (Oxford Univ. Press, 8th ed. 2012).

⁶⁹ Statute of the I.C.J.

⁷⁰ Ram S. Jakhu & Steven Freeland, *The Sources of International Space Law* International Astronautical Congress, Paper ID: 16898 Oral, IAC-13,E7.5,3x16898, (2014) at 4-5.

⁷¹ *Id.* at 5.

⁷² *Id.*

⁷³ *Id.* at 6.

⁷⁴ See Manfred Lachs, *The Law of Outer Space: An Experience in Contemporary Law-Making* (Martinus Nijhoff Publishers 1972, 2010).

⁷⁵ Jakhu and Freeland, *supra* note 70 at 473-74.

- 1963 Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space;
- 1982 Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting;
- 1986 Principles Relating to Remote Sensing of the Earth from Outer Space;
- 1992 Principles Relevant to the Use of Nuclear Power Sources in Outer Space; and,
- 1996 Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries.⁷⁶

These have been accepted with the understanding that soft law instruments may eventually become part of customary international law.⁷⁷

However, before Asgardia is considered in the context of international space law, it first must satisfy the international law applicable to recognized nations. The competence of Asgardia regarding its territory is tied to a recognition embraced by the world community, and one that will require the space station to pass two tests: one subjective and one objective. The subjective test, while simpler, is the more difficult, and as so, it is better to address that one first. It begins with a question: will the founders be able to convince the world that Asgardia is a true nation? Though the objective test of international law should answer this question (which will be addressed next), subjectively, the politics of society could first get in the way. Thus, this subjective test is the first obstacle that Asgardia must overcome.

Dr. John Logsdon, described this subjectivity as the required “societal commitment.”⁷⁸ In the context of setting up a base on the moon, Logsdon noted that a large-scale program is “very much a product of the favorable convergence, at a particular time” of seven factors. He noted the following:

- the specific political context;

⁷⁶ *Id.*

⁷⁷ *Id.* at 474.

⁷⁸ John Logsdon, *Dreams and Realities: The Future in Space*, in LUNAR BASES AND SPACE ACTIVITIES OF THE 21ST CENTURY 701, 707 (W.W. Mendell ed., 1985).

- the visions, values, and styles of individuals in key leadership positions, particularly the President;
- the ambitions and needs of the organization that would carry out a proposed program, particularly as interpreted by the leaders of that organization;
- the ambitions and needs of other organizations that view themselves in competition for the same share of limited national resources required to carry out the program under consideration;
- the outcome of earlier programs of the same character;
- program success not only in technical terms but also in political terms is essential to approval of any “logical next step;”
- the program choices available, their technical, budgetary, and political characteristics, and their potential payoffs.⁷⁹

Logsdon also observed that history showed a pattern in which the interplay among these factors led to decisions to allocate substantial resources to new undertakings in space.⁸⁰ However, he explained that “many of the factors that made those decisions possible were well beyond the control of those advocating a major new start in space.”⁸¹ Nevertheless, he also noticed that advocates of a new program do have influence on policy-making “by providing a sound technical basis for decision-makers” and by “developing and honing a convincing program rationale and attempting to broaden the base of those who accept that rationale and are willing to advocate it.”⁸² Thus, the pioneers of Asgardia should first put their efforts toward advocating on behalf of this noble endeavor and developing a convincing rationale to validate the program.

However, the subjective test should be viewed with the recognition that Asgardia is a visionary project. In essence, it is the largest technological endeavor ever proposed to be placed in orbit and one with fascinating political ramifications. The

⁷⁹ *Id.* at 707-708.

⁸⁰ *Id.* at 708.

⁸¹ *Id.*

⁸² *Id.*

recognition of a new nation-state is based on long established principles of international law. But at its most basic level, if Asgardia is going to be legally recognized as a new nation-state, then it must begin by first establishing its legitimacy within its internal territory.

Without a doubt, Asgardia will represent a new phenomenon within international law. This space station will seek out recognition as a nation-state by the United Nations, while being in orbit, rather than on the surface of planet Earth. To begin, this outpost will probably require *de facto* recognition in order to gain faster legitimacy. History has many examples of moments in international law in which “for long periods entities have existed, frequently claiming to be States or governments, which controlled more or less clearly defined territories without being recognized—at least by many States.”⁸³ Some examples that have been noted include “the Confederation in the American Civil War (1861–65), the national government in the Spanish Civil War (1936–39),” Taiwan, Northern Cyprus, and South Ossetia.⁸⁴

In 1963, Myres McDougal said the following, “the more important decision-makers in contemporary international law are still the officials of nation-states. State officials serve not only as claimants before authority on behalf of their particular communities but also, in reciprocal judgment upon each other, as prescribers and appliers of policy on behalf of the general community.”⁸⁵ This is in essence, another way of looking at the subjective test. However, the longer that Asgardia exists as a *de facto* nation state, the more likely it will be that leaders of other nations will recognize Asgardia as a *de jure* nation-state.

Thus, one could say that the real challenge for Asgardia will be time itself. It has been noted that “State practice shows that entities which in fact govern a specific territory for a prolonged period will be treated as partial subjects of international law.”⁸⁶ This also means that state responsibility attaches to them, and along with it, some status under international law.⁸⁷ Regarding responsibility, McDougal

⁸³ Jochen A Frowein, *De Facto Regime*, MAX PLANCK ENCYCLOPEDIA PUB. INT’L L. (March 2013), <http://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1395?rskey=Ut9gBY&result=1&prd=EPIL>.

⁸⁴ *Id.*

⁸⁵ Myres S. McDougal, *The Emerging Customary Law of Space*, 58 Nw. U. L. Rev. 618, 624 (1963).

⁸⁶ *Id.* at ¶ 3.

⁸⁷ *See id.*

observed that “for officials... is even greater: it is that of building upon appropriate intelligence to make and implement the decisions which will move mankind more certainly toward the preferred comprehensive law and public order.”⁸⁸ John Cobb Copper observed that “the territory of a State may be defined as those regions in which the State is recognized by international law as having the right to exercise national sovereignty to the exclusion of all other States.”⁸⁹ While territory and public order are cemented by international space law, one more element requires primary attention.

Asgardia must meet the four elements accepted under international law for the recognition of states. This objective test is the most notable formula for the establishment of a new nation-state and can be found in elements delineated in the *Montevideo Convention on the Rights and Duties of States* (Montevideo Convention).⁹⁰ The treaty was signed by the United States “at the International Conference of American States in Montevideo, Uruguay on December 26, 1933,” then ratified on June 29, 1934, and entering into force on December 26, 1934.⁹¹ Article 1 of the Convention states:

The state as a person of international law should possess the following qualifications:

- a) a permanent population;
- b) a defined territory;
- c) government; and,
- d) capacity to enter into relations with the other states.⁹²

The lessons learned in the case of Israel and with Indonesia are helpful. The existence of Israel as a nation-state began on May 14, 1948, with only sixteen other nations

⁸⁸ McDougal, *supra* note 85, at 642.

⁸⁹ John C. Cooper, *High Altitude Flight and National Sovereignty*, 4 INT'L L. Q. 411 (Jul. 1951).

⁹⁰ See The Avalon Project: *Convention on Rights and Duties of States (inter-American)* (Dec. 26, 1934), available at http://avalon.law.yale.edu/20th_century/intam03.asp. See also, *Convention on Rights and Duties of States*, Council on Foreign Relations, <http://www.cfr.org/sovereignty/montevideo-convention-rights-duties-states/p15897>.

⁹¹ See *id.*

⁹² *Id.*

recognizing its existence.⁹³ At that time, the United States government decided to *only* recognize Israel based on its *de facto* existence.⁹⁴ The real challenge at the time was proving that a new nation-state could and would endure as a *de jure* government.⁹⁵ To be considered an independent State, Israel had a challenge to surmount. Philip Baum, in 1948, undertook an analysis of President Truman’s statement:

This Government has been informed that a Jewish state has been proclaimed in Palestine, and recognition has been requested by the provisional government thereof. The United States recognizes the provisional government as the *de facto* authority of the new State of Israel.⁹⁶

Baum seemed a bit mystified by the decision of the US government, observing that “it is generally conceded that the elements indispensable to recognition—whether *de facto* or *de jure*” are the same.⁹⁷ Since then, time has shown that this gray area between *de facto* and *de jure* is more fabricated than inherited by custom. Ian Brownlie explained it best, when he quoted an earlier scholar, noting that “there is probably no other subject in the field of international relations in which law and politics appear to be more closely interwoven.”⁹⁸

This diplomatic observation simply noted that the recognition of Asgardia as a new nation could be delayed by the unnecessary wrangling of politics within the United Nations. It seems that to minimize these trappings, the leaders of Asgardia must definitely satisfy the four requirements mentioned above, at least, to secure the *de facto* recognition of other nations. In addition, Baum explained that equally, the founders would have to avoid the following challenging pitfalls:

- (1) the fact that the government is “provisional”;
- (2) the fact that it has not received democratic approval of the people;

⁹³ Philip Baum, *Full Recognition of Israel: An Analysis of United States Diplomatic Practice in Granting De Jure Recognition to Newly-Established Governments*, 8 L. GUILD REV. 441, 441 (1948).

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ Baum, *supra* note 93.

⁹⁷ *Id.*

⁹⁸ Crawford, *supra* note 68, at 144.

- (3) the possibility of imminent overthrow of the Government; and
- (4) the fact that its territory has not been precisely defined.⁹⁹

The next step would be to take a close look at original governance guidelines for Asgardia, and assess whether any of these challenges would be significant. Perhaps the last one would offer more opportunity for discussion. Baum noted that while the objection to de jure recognition was “most readily made,” because of the supposed uncertainty of the geographical boundaries of Israel, in reality, “the objection [was] also the most easily refuted,” given that the boundaries of the new nation have been fixed by “the resolution of the U.N. General Assembly—an action supported by the United States.”¹⁰⁰

The conditions for the acceptance of Asgardia as a nation-state are further clarified by the case of Indonesia. Scholars Sastroamidjojo and Delson took Baum’s analysis to seek understanding in that case, regarding its independence from the Netherlands. For them, Baum’s analysis on Israel was highly valuable as they noted that “many writers on international law agree that the existence of a State is independent of its recognition by other States... [and] such recognition, when forthcoming, is merely declaratory of the already established fact of statehood.”¹⁰¹ Could it be said, therefore, that the establishment of Asgardia as a nation-state begins with its own people? Sastroamidjojo and Delson reminded us of another case around that time. In the case between Great Britain and Costa Rica, they noted the following statement from Chief Justice William H. Taft, sole arbitrator in that case. On October 18, 1923 he stated:

For a full two years [President] Tinoco and the legislative assembly under him peaceably administered the affairs of the Government of Costa Rica, and there was no disorder of a revolutionary character during that interval. No other government of any kind asserted power in the country. The courts sat, Congress legislated, and the government was duly administered. Its power

⁹⁹ Baum, *supra* note 93, at 442.

¹⁰⁰ *Id.* at 445.

¹⁰¹ Ali Sastroamidjojo & Robert Delson, *The Status of the Republic of Indonesia*, 49 COLUM. L. REV. 344, 344 (1949).

was fully established and peaceably exercised... I must hold from the evidence that the Tinoco government was an actual sovereign government.¹⁰²

Sastroamidjojo and Delson observed that Chief Justice Taft noted: “non-recognition... cannot outweigh the evidence... as to the de facto character of Tinoco's government, according to the standard set by international law.”¹⁰³ It is safe to say that Sastroamidjojo and Delson would agree, that Asgardia may claim *de jure* recognition by its very own eventual development as a *de facto* nation.¹⁰⁴

Thus, Asgardia would operate with the *spécialité des pouvoirs* (special of powers) to gain that *généralité des pouvoirs* (general authority) of both *de facto* and *de jure* state.¹⁰⁵ The evolution over the years has given the planners of Asgardia a unique opportunity to make new history. Asgardia is referred to as a place and as an endeavor. It is described first as “a nation of free thinkers representing humanitarian values and supporting the intellectual and ethical development of all people.”¹⁰⁶ These ideals are compatible to those principles enshrined in the International Bill of Human Rights.¹⁰⁷ Asgardia is also described as a “unifying and humanitarian project.”¹⁰⁸ If this project will succeed, then this station must exist as a nation within the parameters of international space law.

C. *Nation Above the Clouds*

The twentieth century was a time of development and one that placed the United States of America and the Soviet Union in a unique position. An idea that began with the space engineering efforts of Sergei Pavlovich Korolev, would capture

¹⁰² *Id.* at 348.

¹⁰³ *Id.* at 352.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Igor Ashurbeyli, *Asgardia*, ASGARDIA: THE SPACE KINGDOM (2017), <https://asgardia.space/en/page/government>.

¹⁰⁷ This bill is constituted by three documents: G.A. Res. 217 (III) A, Universal Declaration of Human Rights (Dec. 10, 1948); G.A. Res. 2200A (XXI), The International Covenant on Economic, Social and Cultural Rights (Dec. 19, 1966); G.A. Res. 2200A (XXI), The International Covenant on Civil and Political Rights (Dec. 19, 1966).

¹⁰⁸ Igor Ashurbeyli, *Concept Asgardia – The Space Nation*, ASGARDIA: THE SPACE KINGDOM (2017), <https://asgardia.space/en/page/concept>.

the imagination and determination of a new space industry.¹⁰⁹ The first milestone of the century was the launch of the Soviet satellite Sputnik in 1957, which ushered a new age of exploration and use of outer space.¹¹⁰ President Dwight D. Eisenhower, along with Congress, reacted to this event by concentrating resources to an outer space policy for the United States.¹¹¹ The outcome was the creation of two new agencies: the Advanced Research Projects Agency (ARPA), which would ensure missile superiority,¹¹² and five months later, the National Aeronautics and Space Administration (NASA) for the complete success of the US in outer space.¹¹³ Now, at the end of the second decade of the twenty first century, another guide post steers humanity toward the next outcome the first nation-state in space. It is here that international space law helps assess the final element of the Asgardian Project.

The political and governance structure of Asgardia is centered in a council of twelve Ministers.¹¹⁴ As of April 2017, the following Ministries were established:

1. Ministry of Information and Communication
2. Ministry of Justice
3. Ministry of Science
4. Ministry of Citizenship
5. Ministry of Foreign Affairs
6. Ministry of Finance
7. Ministry of Trade and Commerce
8. Ministry of Youth and Education
9. Ministry of Safety and Security
10. Ministry of Equity and Resources
11. Ministry of Administrative Affairs

¹⁰⁹ NASA, *Korolev and Freedom of Space: February 14, 1955–October 4, 1957*, NASA'S ORIGINS AND THE DAWN OF THE SPACE AGE, MONOGRAPHS IN AEROSPACE HISTORY #10, <http://www.hq.nasa.gov/office/pao/History/monograph10/korspace.html> (last visited Dec. 21, 2017).

¹¹⁰ See generally PAUL DICKSON, *SPUTNIK: THE SHOCK OF THE CENTURY* (2011).

¹¹¹ Dwight D. Eisenhower Mem'l, *Interstate to the Internet: President Eisenhower's Legacy*, NAT'L EISENHOWER MEM'L EDUC. MATERIALS, <https://timeline.eisenhowermemorial.gov/lessonplans> (click "Interstate to the Internet" download).

¹¹² *Id.*

¹¹³ U.S. Centennial of Flight Comm'n, *The National Advisory Committee for Aeronautics (NACA)*, http://www.centennialofflight.net/essay/Evolution_of_Technology/NACA/Tech1.htm.

¹¹⁴ Ashurbeyli, *supra* note 106.

While this government structure is the beginning element to satisfy the objective test noted above, for Asgardia, there is a third and final test. This one is equally valuable due to its very nature. Asgardia will be in space and would have to consider the legacy of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) and the five outer space treaties, which have provided the basis of international space law:

1. Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty);¹¹⁵
2. Convention on International Liability for Damage Caused by Space Objects (Resolution 2777 (1972 Liability Convention));¹¹⁶
3. Convention on Registration of Objects Launched into Outer Space (1975 Registration Convention);¹¹⁷
4. 1968 Agreement on the Rescue of Astronauts;¹¹⁸
5. 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies.¹¹⁹

Regarding Asgardia, Igor Ashurbeyli explains that the “project’s philosophy starts at selecting the name for the new country... [and] the realization of man’s eternal dream to leave his cradle on Earth and expand into the Universe.”¹²⁰ Asgardia is an intriguing concept further cemented in the following elements:

¹¹⁵ G.A. Res. 2222 (XXI), annex, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Dec. 19, 1966).

¹¹⁶ G.A. Res. 2777 (XXVI), annex, Convention on International Liability for Damage Caused by Space Objects (Nov. 29, 1971).

¹¹⁷ G.A. Res. 3235 (XXIX), annex, Convention on Registration of Objects Launched into Outer Space (Nov. 12, 1974).

¹¹⁸ G.A. Res. 2345 (XXII) 22/32, annex, Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Dec. 19, 1967).

¹¹⁹ G.A. Res. 34/68, annex, Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Dec. 5, 1979).

¹²⁰ Ashurbeyli, *supra* note 106.

1. It is fully-fledged and independent nation, and a future member of the United Nations;
2. Its true essence is *peace in space*, and the prevention of Earth's conflicts being transferred into space;
3. It is to serve entire humanity and each and everyone;
4. Citizenship: regardless of his or her personal welfare and the prosperity of the country where they happened to be born;
5. The Noosphere concept will allow it to create a mirror of humanity in space but without division into states, religions and nations.¹²¹

These elements are aligned with Article I, paragraph 1 of the 1967 Outer Space Treaty, which provides that “the exploration and use of outer space... shall be carried out for the benefit and in the interests of all countries...”¹²² Jakhu and Vasilogeorgi noted that Article I, paragraph 1 declared a *common interest* general principle, “declaring that... the use of outer space must be carried out for the benefit and in the interests of all countries...”¹²³ Article I, paragraph 2 provides for the exploration and use of outer space without discrimination in accordance with public international law.¹²⁴ The Asgardian project is one that will “ensure the peaceful use of space.”¹²⁵ Ram Jakhu further explains that “[the] legal principle of freedom of exploration and use of outer space by all States... [should be carried out] ...with due regard to the corresponding interests of all other States.”¹²⁶ The treaties mentioned above provide the needed guide posts for a meaningful future to be found in the Asgardian project. Considering the concept of Asgardia is one of Peace in Space, it seems that the founders have planned for a fruitful project.¹²⁷

¹²¹ *Id.*

¹²² Outer Space Treaty, *supra* note 61, at 13.

¹²³ Ram S. Jakhu & Isavella Maria Vasilogeorgi, *The Fundamental Principles of Space Law and the Relevance of International Law, in HEAVEN AS ON EARTH? THE INTERACTION OF PUBLIC INTERNATIONAL LAW OF THE LEGAL REGULATION OF OUTERS SPACE* 29-30 (Stephan Hobe & Steven Freeland eds, 2013).

¹²⁴ *Id.*

¹²⁵ Ashurbeyli, *supra* note 106.

¹²⁶ Ram S. Jakhu, *Sixty Years of Development of International Space Law* 9 (2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2801728.

¹²⁷ Ashurbeyli, *supra* note 106.

While it might be easy to dismiss Asgardia as a chimera, the project's concept comprises features that are philosophical, legal and technological.¹²⁸ The final considerations are those common to all nation states. Jakhu would agree that time does not allow for “a leisurely evaluation of the problems” regarding state obligations. To be sure, Article IV of the Outer Space Treaty would apply to Asgardia because it would have an international responsibility for its own activities in outer space.¹²⁹ Bin Cheng would also agree because the Asgardian activities would necessitate “authorization and continuing supervision.”¹³⁰ The Asgardian project is one that seeks to protect Earth from known threats and provide “demilitarized and free scientific base of knowledge in space.” It would not be surprising that Asgardia may want to launch its own space objects, and therefore, under Articles I, II and III of the Liability Convention, and Article VII of the Outer Space Treaty, Asgardia would be liable for its national activities.¹³¹ Regarding the other two, while the Registration Convention adds responsibilities and obligations, the Rescue of Astronauts would be even more relevant.¹³² All Asgardians will be astronauts. That is not to say that customary law and soft law for outer space are inapplicable or irrelevant. Those would be expected to be incorporated in the activities of Asgardia.¹³³ Finally, Asgardians will need resources to power their station and possibly explore the solar system and beyond. When that becomes part of their development, the Moon Agreement could serve as a guide—although not binding—regarding their activities.¹³⁴

¹²⁸ *Id.*

¹²⁹ Jakhu, *supra* note 123; *see also*, Spencer, *infra* note 131, at 6.

¹³⁰ Bin Cheng, *Article VI of the 1967 Space Treaty Revisited: “International Responsibility”, “National Activities”, and “The Appropriate State”*, 26 J. Space L. 7, 8 (1998).

¹³¹ Ronald L. Spencer, Jr., *International Space Law: A Basis for National Regulation*, 5 SPACE REG. LIBR. 1, 9 (2010). *See also*, G.A. Res. 2777 (XXVI), annex Convention on International Liability for Damage Caused by Space Objects, *opened for signature* Mar. 29, 1972, 24 U.S.T. 2389.

¹³² *Id.*, at 11.

¹³³ *See* G.A. Res. 3235 (XXIX), annex, Convention on Registration of Objects Launched into Outer Space, *opened for signature* Jan. 14, 1975, 28 U.S.T. 695. *See also* G.A. Res. 2345 (XXII), annex, Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, *opened for signature* Apr. 22, 1968, 19 U.S.T. 7570;

¹³⁴ G.A. Res. 34/68, Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, *opened for signature* Dec. 18, 1979.

III. MESSAGES FROM EARTH: CONCLUSION

The Asgardian project calls for the development of *astropolitics*.¹³⁵ This is reminiscent of visions of humanity extending into the cosmos. Carl Sagan's would bring to the discussion mathematical and somewhat philosophical fundamentals that would humble the most skilled visionary. Sagan would ponder about the meaning of life in the universe.¹³⁶ If Sagan was still alive today, he would be pleased by the Asgardian project. He observed that estimates lead to the potential of one million advanced technical civilizations in the Milky Way.¹³⁷ Thus, considering that there are billions of galaxies in the universe, this statistic also serves as a realization that "interstellar spaceflight at relativistic velocities has several obvious advantages... One striking feature is that... all points in the Galaxy are accessible within the lifetime of a human crew..."¹³⁸ Sagan's vision included "the construction of starships capable of relativistic velocities" while stating that there were "no fundamental... problems... for relativistic interstellar spaceflight."¹³⁹ In the true spirit of Asgardia, Sagan expertly added that "through extensive discussion and experiment" the truth would emerge.¹⁴⁰

Thus, Asgardians will go to the stars to begin something new. And their story begins now. It begins with ideas about the betterment of humanity. The construction of Asgardia is a necessary reality that will aid the next space age. All the ingredients necessary for its success are already available. What could we see in 2117? At the edge of the atmosphere, the beginning, the road to the unknown, with the world watching, and in front, a gateway opening that vast firmament that we know as the universe. In between those hovers silently a city above the clouds. This glimmering structure is celebrating one hundred years of existence. But it began with an idea and this has been the reason of this paper. For the Asgardians, this is the beginning of their story and one full of possibilities.

¹³⁵ Ashurbeyli, *supra* note 106.

¹³⁶ [This article originated with a presentation two years earlier at the American Rocket Society's 17th Annual Meeting in Los Angeles on November 15, 1962.] Carl Sagan, *Direct Contact Among Galactic Populations by Relativistic Interstellar Spaceflight*, 11 PLANETARY & SPACE SCI. 485, 485-86 (1964).

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Id.*