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APPLYING INTERNATIONAL SPACE LAW PRECEDENT TO SPACE TOURISM, SPACE MINING AND SPACE SETTLEMENT

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ABSTRACT

A pattern exists whereby U.S. domestic space law has exhibited a tendency of setting commercialization and privatization trends. Over time, commercialization and privatization processes became the norm for satellite telecommunications, remote sensing, space transportation & launch services, space stations and spaceports. This paper provides an overview of space law from its beginning, through its changes, and today's new increased private-sector participation. The position taken herein is that something akin to legal precedent is in the process of being established with respect to private space tourism, private space trips, space exploration and other related space activities. Considering this legal trend - from the formation and purpose of the COMSAT Corporation to the recent political and legal issues surrounding the U.S. Orbit Act - this paper entertains possible emerging legal trends which have begun to spark. This includes possible legal implications of the *New Vision for Space Exploration Policy*, and for space tourism, space mining and space settlements as humankind journeys out to develop the final frontier.

1. A POLITICAL - HISTORICAL ANALYSIS OF SPACE LAW

The evolvement of international space law has largely been ignored by the field of political science/international relations. However, by applying insights from political science, interesting insights are revealed. For example, by understanding outer space politics within the context of three distinct epochs, we are better able to understand and foresee emerging trends. This is part of a formula which will be discussed herein.

1.1 The First Epoch

The first epoch of outer space development began when the Soviet Union launched Sputnik into Earth's orbit on October 4, 1957, and ended around 1979 when détente between the U.S. and the ended. In this historical epoch, political actions were shaped by Cold War fears. Tensions still high after World War I and World War II and the world trembled with concern over preventing a possible World War III. After the Sputnik launch, states immediately held meetings at the United Nations to discuss creating laws to govern the new outer space territory. In political science language, the key political actors were nation states who came together to cooperate through international institutions which they created for the purpose of managing multi-state interests regarding this new territory.

After nearly ten years of extensive negotiations between states working through the United Nations, five international space treaties were enacted to provide the core of

space law. These principles (norms) which make up space law were created by three main actors: the United States, the Soviet Union and a group of various states operating through the United Nations.

The U.S. and U.S.S.R. were the two superpowers. As such, they constantly vied for alliances with other states. To this extent, other states had power. Although, the United States has always maintained an interest in a free market direction for space activities, during the first epoch it had to consider the interests of the U.S.S.R. and other states. Early attempts were made by the U.S. in an effort to exercise free market ideology regarding space. For example, as early as 1959, President Eisenhower declared that the U.S. Government . . . "should aggressively encourage private enterprise in the establishment and operation of satellite relays for revenue-producing services" (Jasentuliyana & Lee, 1979-1981, Vol. 1: at 304). However, The U.S. and U.S.S.R. were constantly butting heads. Superpower ideological conflicts created severe impasses during the 1950s and 1960s during space lawmaking negotiations. In addition to focusing on state power, personalities of state leaders mattered too. For example, space law negotiations were constantly halted when President Eisenhower was the leader of the U.S. and Chairman Khrushchev was the leader of the Soviet Union. In comparison, when John F. Kennedy became President, he used a different attitude, as evidenced by various pieces of correspondence to Khrushchev[1]. This change in attitude seems to have alleviated the frequent impasses. This period was the most fruitful period for *international* space lawmaking.

In addition to state power and attitudes of state leaders, the international political environment must also be considered in order to more deeply understand changes in space law. For example, international space lawmaking was most successful during *détente*, when tensions were relaxed and a series of international space treaties were negotiated, drafted and signed by the international community acting through the United Nations. Consistent with this theme, when political détente between the United States and Soviet Union waned in 1979, so did the process of international space lawmaking. This was in spite of all of the successful cooperation within the various international institutions. The Moon Treaty of 1979, the last in a series of five international treaties, was essentially stillborn[2].

1.2 The Second Epoch

Since there was a distinct change in space law in 1979, it makes sense to say that this dramatic shift marked the second epoch of outer space development (1980 to 1991). During the second epoch, a dramatic shift occurred when President Reagan became leader of the United States. The policies regarding space were consistent with the new political mood. Détente had ended and the Cold War had returned right before President Reagan took office. International relations between the two superpowers had "turned sour" (Von Bencke, 1997: 93). President Reagan highlighted this situation and used it as justification for no longer trusting the Soviet Union. As one scholar explains, "upon assuming office, Ronald Reagan immediately began implementing the "get tough" program he had championed during his campaign" (Von Benke, 1997: 93). Another example, in a speech on January 29, 1981, President Reagan asserted that "détente's been a one-way street that the Soviet Union has used to pursue its own aims . . ."[3]. Reagan used this no trust attitude to justify the creation of a myriad of U.S. domestic space laws which were used to privatize and commercialize space activities (Von Bencke, 1997).

With the return of the Cold War, outer space once again was treated as a national security concern, on one hand, yet it became a matter for commercial enterprise o the other. The Reagan Administration issued a large number of National Security Decision Directives[4] regarding national defense, and it consistently procured funds for a Strategic Defense Initiative (SDI). Also, President Reagan increased President Carter's proposed military budget by an additional $6.3 billion even though Carter had already requested a significant increase (Von Bencke, 1997: 93).

Another key aspect of the international political environment during the second epoch involved drastic changes in leadership of the Soviet Union. During the mid-1980s Mikhail Gorbachev had a policy of encouraging some aspects of private economy in the former USSR[5] (Goldman, 1996: 110). After 1985 various events began to change and the relations between the U.S. and Soviet Union improved. For example, in 1987 the U.S. and USSR signed a bilateral agreement regarding cooperation in space[6]. Changes occurring in the Soviet Union included a change in leadership, a decrease in economic and political power, and a decrease in control over the Eastern European bloc countries (Von Bencke, 1997). During Gorbachev's time, "the Soviet Union faced declining world power and general economic collapse" (Von Bencke, 1997: 96). It was during this time and towards the end of the Cold War that Gorbachev began "his policies of liberalization", which "contributed to 1989 revolutions in Bulgaria, Czechoslovakia, East Germany, Romania, Hungary, Poland and March 1990 Declarations of independence from Lithuania and Estonia" (Von Bencke, 1997: 96). As soon as "Gorbachev took power in March 1985, the U.S. and USSR resumed arms negotiations, and from November 19 to 21 of that same year Reagan and Gorbachev met for the first time in Geneva" (Von Bencke, 1997: 97). Once again, nuclear disarmament talks set the tone for outer space cooperation (Von Bencke, 1997: 97). While political issues plagued the other space superpower, the U.S. boldly began to privatize and commercialize space activities. This had been an interest of the U.S. since the beginning of the space age (Krug, 1991; and Von Bencke, 1997).

Although both the first and second epoch occurred during and were influenced by the Cold War era, the second epoch is distinct from the first epoch in two ways. First rapid advances occurred in commercialization of space technology. For example, from 1957 to the mid-1980s global spending on space activities were approximately $300 billion (Dula, 1985: 163). Internationally, space spending during the second epoch had risen to about $100 billion *annually* (Goodrich, 1989: 12). The profit potential of space had been clearly demonstrated and the process of space commercialization had begun. Second, space lawmaking shifted from the international to the domestic arena.

During the second epoch, the United States became the key actor in the growing practice of creating *domestic* space laws rather than to defer to the United Nations. For some, the United Nations international lawmaking machinery had proven to be too slow and too unpredictable to keep pace with the rapid development of commercial applications of space technologies (Goldman, 1996).

During the second epoch, private-sector actors became increasingly relevant and were consistently encouraged to participate in space through various government incentives and domestic legislation (Obermann and Williamson, 1998; d'Angelo, 1994; Brooks, 1991;

Straubel, 1987; and Finch & Moore, 1985). The new domestic laws created to govern newly emerging space industries such as satellite telecommunications, remote sensing, space launch and transportation services and space stations began to thrive and became widely acceptable within the international community. The general public also accepted these commercialization and privatization practices since they were viewed as successful - profitable. These newly emerging industries produced new goods and services with high consumer demand. As the result of these trends the geostationary orbit was divided into territories[7]. Several countries followed the trend of commercializing, privatizing and creating domestic space laws in the second epoch. The agenda for outer space was expanded to include economic interests, which were treated as equally important to national security concerns.

1.3 The Third Epoch

The third epoch is marked by the advent of the Post Cold War era. It is generally understood that after the Cold War, neoliberal policies, deregulation, liberalization, privatization and free market ideas arose as the dominant ideology in the international arena (Mittelman, 2001; Steger, 2001; Gilpin, 2001). With these changes, and the end of the Cold War, neoliberal free market ideology became a dominant belief system (Stiglitz, 2002; Rupert, 2000). This dominance was connected to globalization and privatization processes (Mandelbaum, 2002; Dumenil, Levy & Jeffers, 2004; Moylan & Baccolini, 2003; Yergin & Stanislaw, 2002; Steger, 2001). As Rao & Rao (1998: 1) in *Globalization, Privatization and the Free Market Economy* point out that "three dominant forces shaping societies and economies around the world" are globalization, privatization, and liberalization. The authors describe these three factors as a "multidimensional phenomena" which impact the economic considerations as well as the sociocultural and environmental aspects of societies. Similarly, Cole (1999) provides that privatization has "swept the globe". Furthermore, this dominance was achieved through the process of lawmaking (Aune, 2002; Williams, 2001; Garvey, 2000; Fitzpatrick, 1996). Similarly, Gilpin (2001: 3) sets forth that "since the end of the Cold War, globalization has been the most outstanding characteristic of international economic affairs, and, to a considerable extent, of political affairs as well", and he acknowledges that "globalization has become the defining feature of the international economy at the beginning of the twenty-first century. . .". Linked to this is the tendency to accept free market/free trade principles (Claudon & Wittneben, 1993; Travieso-Diaz, 1996; Roden, 2003; Cafruny & Ryner, 2003). In addition, China and Russia in many ways has joined in this procession towards globalization practices and neoliberal free market hegemony (Molchanov, 2005; Rogachev, 2005; Zhao, 2004; Peng, 2003). After the Cold War, various international conventions and regional trade blocs promoting free market ideology were widely entered into by the international community. These factors point to the dominance of free market ideology in today's Post Cold War environment.

No longer are geo-politics governed by the superpower rivalry between the U.S. and U.S.S.R. U.S. hegemony rose shortly after the fall of the Soviet Union. When considering space law change, it is important to consider these sorts of factors occurring at the international level. These structural changes have impacted, and will continue to impact the outer space development regime in countless ways.

2. IMPACT OF U.S. SPACE LAW ON COMMERCIALIZATION

Space commercialization has become generally accepted by the international space community and by the general publics worldwide. U.S. domestic space law has historically had a dramatic impact on space commercialization. The legal custom during the first epoch was that space lawmaking was regarded as an international affair. The norms and rules of law were debated, negotiated and drafted through the United Nations COPUOS (Jasentuliyana and Lee (1979-1981). During the second epoch, space lawmaking shifted to the domestic arena, partly because of the Reagan Administration's no trust attitude, but also because the international arena took approximately ten years to arrive at an agreement on the Outer Space Treaty of 1967. This is because the process involved approximately 100 nations negotiating, debating and discussing the terms of the international agreements. Meanwhile space technology was being rapidly turned into profitable industries. The U.S. - led custom of creating domestic space laws instead of international space law during the second epoch became acceptable within the international community.

In the Post Cold War era with the dominance of free market ideology and globalization practices, the norm became allowing the market to determine legal principles. Projections of industry success and profitability ratios seem to be increasingly seen as a factor in legal considerations.

The historical record demonstrates the U.S. had an interest in commercializing space technology since the beginning of the space age. However, as stated earlier, during the first and second epochs, the U.S. was not the only superpower. The Soviet Union had reservations about a neoliberal approach to outer space. In spite of this, and notwithstanding Ariane's commercial trailblazing record, the U.S. was a dominant political actor in setting space commercialization trends through the passage of a myriad of domestic space laws. For example, in 1962 the U.S. Congress passed the Communications Satellite Act of for the purpose of commercializing space satellite technologies. President Kennedy had "charged his administration with the need to develop a coherent and cohesive policy with respect to communications satellites" and by July 1961 he called for joint ownership with other nations of a communications satellite system, non-discriminatory access for all countries of the world, and a constructive role for the United Nations in international space communications (Jasentuliyana & Lee, 1979-1981, Vol. 1: at 304). This effort is still seen today as a motion in favor of goodwill to promote space benefits for all people, around the world. This gesture is still remembered, by members of the outer space development community, as an example of one of the great things that the U.S. has done. Shares were offered to the international community when the COMSAT corporation developed into INTELSAT via a U.S. - led international agreement. Many nations participated in space commerce associated with this bourgeoning technology. Around the world today many people use cell phones, the Internet, money transfer systems and enjoy increased GNP due to these space industries. Therefore, beginning with the first epoch and expanding through the second epoch, the U.S. established a pattern of leadership in space commercialization, through U.S. domestic law, which was created and used to facilitate space commercialization. Once industries flourished as the result of these practices, acceptance and adoption by the international community have usually followed.

In the third epoch, U.S. law became more far reaching, often directly calling for changes in the international arena. Examples include, the Land Remote Sensing Policy Act of 1992 increased the level of privatization in remote sensing and the Telecommunications Act of 1996[8], which facilitated the deregulation of the telecommunications industry (Salin, 2002: 212). As a result, U.S. telecommunications policy began to focus on liberalizing international markets. Telecommunications services were included in the General Agreement of Tariffs and Trade (the "GATT"), and the newly created World Trade Organization (WTO) was given the responsibility of "brokering future trade agreements to open up global telecommunications markets" (Wong, 1998: 6)[9]. Another example, in November of 1999 the U.S. Congress passed the Intellectual Property and Communications Omnibus Reform Act[10]. This was a powerful piece of legislation amending Title 17 of the US Code, the Communications Act of 1934, the Satellite Home Viewer Act of 1994, the Trademark Act of 1946 and the Tariff Act of 1930 and several Federal Patent regulations (Salin, 2002: 220). In the spirit of free market protection, it increases the amount of legal protection for inventors from piracy of intellectual properties such as trademark, patent, domain name and publications for services offered by satellite carriers. Perhaps, an even more poignant example is that the two main intergovernmental organizations, INTELSAT and Inmarsat[11], were placed on an agenda to go through the process of privatization. This was mandated through a U.S. domestic law called the U.S. ORBIT Act of 2000. The overall legislative intent was to restructure the two intergovernmental organizations in order to "create a competitive satellite industry in the United States through the restructuring of the ISOs" (Wong, 1998: 2).

3. CUSTOM AND LEGAL PRECEDENT

On October 4, 2004, SpaceShipOne won the 1st annual $10,000,000 Ansari X Prize. A few months earlier, the Federal Aviation Administration Office of Commercial Space Transportation (U.S.) had issued the world's first license for the *private* sub-orbital trip into outer space. This was the first time in history that a privately funded, private spaceship traveled into outer space. This event received wide media coverage and was spoken of as being akin to the historic Charles Lindberg flight. Contrarily, when Sputnik was launched on October 4, 1957 this alerted global panic. State leaders immediately took action calling for meetings and discussions to institute the passage of international space laws (Doyle, 2002; Metcalf, 1999). For example, within days, U.S. President Eisenhower and other leaders contacted the United Nations regarding Sputnik. As Galloway (1997) informs, right after the launch "[t]here was instantaneous reaction by the Senate Armed Services Committee" (Galloway, 1997: 1). During 1958 there were "multiple exchanges of formal correspondence between heads of state of major powers" and "multiple proposals submitted to the United Nations for consideration by the General Assembly" (Doyle, 2002: 83)[12]. Shortly thereafter, debates on space law took place in the United Nations from November 17-24, 1958. During these debates states pressed the United Nations to create a body of law to govern the new territory. In comparison, the SpaceShipOne launch, although the first of its kind in 2004, the SpaceShipOne launch did not arouse global panic or *international* lawmaking activities. No one rushed to the United Nations out of fear or concern. No one requested the COPUOS or its Legal Subcommittee to pass international laws to govern private trips to space. Considering the Post Cold War mood, perhaps no one

flinched because privatization and commercialization are increasingly seen as the norm. Can it be that we are witnessing private space travel in the process of becoming a custom - a legal precedent?

Since all pre-SpaceShipOne trips were government operations, the quiet acceptance of this private space trip is an important signifier. It signals that a revolution involving private investment and private spaceships is underway. A shocking number of business moguls, many of whom became billionaires during the Internet revolution, have been testifying before the U.S. Senate Subcommittee on Science, Technology, and Space and the House Subcommittee on Space & Aeronautics, as well as to the President's Commission on Implementation of U.S. Space Exploration, asserting that it is time to expand the role of the private-sector. This includes a mandate to "transform" NASA. Political lobbying activity by new space entrepreneurs is happening concurrently with similar activities by members of the established space industrial base, who have also provided similar testimonies before these tribunals. Exciting? Yes! However, in light of the way international customary law works, legal precedent could be in the process of being established. There should be some concern since these activities may ultimately serve to contradict the express intent of the framers of the international space treaties. Furthermore, since there is a relative silence about this whole process, a custom may arise with the affect of being a legal precedent. Reactions to signifying events, such as doing nothing, can cause such acts to become established as custom (Metcalf, 1999: 82-84). After all, this *was* the concern when Sputnik was launched.

4. NEW U.S. POLITICAL ACTIONS

In the U.S., a large number of space entrepreneurs have been busy lobbying Congress to pass legislation to spark increased space privatization, President Bush articulated the New Vision for U.S. Space Exploration Policy in 2004 and created the President's Commission on Moon, Mars and Beyond the same year. The President's Commission published an implementation report which outlines the direction for further outer space development. In addition, several new U.S. domestic laws to foster privatization were passed in December 2004 and December 2005. In addition, the increased reliance on private corporations for space activities has already become main themes for many international space conferences such as International Astronautical Federation Congresses and United Nations Committee on Peaceful Uses of Outer Space workshops.

Considering the new role played by the private-sector and space entrepreneurs, and given the pattern of U.S. trendsetting behavior regarding space commercialization and privatization, recent U.S. legislation and policy may ultimately prove to have an impact which could wind up being disagreeable with various members of the international space lawmaking community. What will happen then? Is the international community on one accord regarding new privatization policy?

Based upon a careful review and analysis of various hearing transcripts of testimonies before the President's Commission on Implementation of U.S. Space Exploration Policy of 2004, similar testimonies before the U.S. House of Representative, Committee on Science, Subcommittee on Space & Aeronautics, and the Senate Subcommittee on Science, Space and Technology, the Commercial Space Launch Amendments Act of 2004, the NASA Authorization Bill of 2005, the President's Commission Report of June 2004, UN Resolution 51/122 (1996), and the IISL Board of Directors Statement of 2004,

an incidental legal loophole may have been created which will allow for privatizing space resources. Resources which were once thought to have been deemed "province of mankind" according to the international space law treaties[13]. Since no one can say definitively what the term *province of mankind* really means, there is still a hole in international space law. This is important to address because, as described above, in the third epoch, the dominant ideology gravitates towards free marketization. In addition to all of this, a *new space race* is underway involving private space travel and the newly emerging space tourism industry. This is different from the U.S. – U.S.S.R. Cold War space race, which involved governments in competition for national prestige. The new space race is being run by space entrepreneurs and the legalization of private space travel. At the same time, commercial spaceports are increasingly being commercialized and involved the private-sector. Unique and natural resources such as the platinum group metals are virtually untapped and abundant in outer space, and are fairly easy to get to. The high technology applications for these types of natural resources make them priceless - worth trillions of dollars. Having the means to get to outer space could be in the process of being redefined.

The U.S. has historically set the trend for space commercialization and privatization. Therefore, it seems highly likely that President Bush's New Vision for U.S. Space Exploration Policy could also establish a new trend. For example, Recommendation 5-2 of the Commission report[14] reads:

> The Commission recommends that Congress increase the potential for commercial opportunities related to the national space exploration vision by providing incentives for entrepreneurial investment in space, by creating significant monetary prizes for the accomplishment of space missions and/or technology developments and by assuring appropriate property rights for those who seek to develop space resources and infrastructure.

(President's Commission Report of 2004 at pg. 32)

For years now, the members of the International Institute of Space Law have debated the issue of whether or not private property rights are allowable in accordance with international space law. Now it appears from a reading of the above passage of the President's Commission report that the U.S. may have, arguably, had picked a side in this debate. Only time will tell. Will the private-sector take over outer space exploration and the building of space settlements? Will this be alright with the international space community? Is the U.S. setting another new trend? Will this issue continue to go formally unaddressed by the international space lawmaking community? If so, then a custom will arise, and this new pattern could have the force and affect of legal precedent.

The likelihood of a trend establishing is great if we consider all of the above points coupled with the caveat note appearing at the bottom of the IISL Board of Directors Statement of July 2004 entitled "On Claims to Property Rights Regarding The Moon and Other Celestial Bodies"[15]. The statement itself basically says no to private property rights in outer space. However, the note appearing at the bottom of this statement may arguably be treated as a legal loophole. The note reads:

> Notwithstanding matters covered in the above Statement, the Board of Directors of the IISL recognises that other private activities on the Moon and other celestial bodies are permitted. Article VI of the Outer Space Treaty affirms that non-governmental entities, including private individuals, companies, and organizations, have the right to conduct activities in space in accordance with international space law, and subject to the authorization and continuing supervision of the appropriate State Party. The IISL plans to convene a Workshop to explore

> issues regarding the relationship of government and private sector in space.

The phrase "including private individuals, companies, and organizations, have the right to conduct activities . . ." could serve as a legal loophole. In addition, the phrase, "in accordance with international space law" could serve as an addition legal loophole since the issue of whether or not international space law allows or prohibits private property rights is currently stuck in debate status within both the UN COPUOS and the IISL.

CONCLUSION

In addition to these possible legal loopholes, millions of dollars are being offered through various prizes to spur increased privatization of space. This is all linked to space tourism, space mining, and space settlement. In addition to the $10 million dollar Ansari X Prize, many other cash prizes are being offered to spur space entrepreneurship/space privatization, for brave souls willing to take space commercialization to higher heights. Examples include, the NASA Centennial Challenges Prizes ($100,000,000), the America's Space Prize ($50,000,000 million), the Heinlein Prize for Practical Accomplishments in Commercial Space Activities ($500,000) and the NASA Ralph Steckler/Space Grant Space Colonization Research and Technology Opportunity involved awards totaling $1,000,000. At the same time, things are happening at the cultural level to popularize private space travel. For example in a recent article there is a photo of Sir Richard Branson, Chairman of Virgin Galactic and Bill Richardson, Governor of New Mexico. They are both are smiling brightly, as Governor Richardson playfully holds up a small toy-like model of Virgin spacecraft. The article states that Virgin Galactic "will locate the world headquarters and mission control for its personal spaceflight business at the Spaceport in Upham" New Mexico[16]. Another recent article reads: "new rocket development company recently announced plans to build a spaceport in the United Arab Emirates, costly approximately $265 million". It further states that the company's spaceships will be designed by a Russian company. Financiers for this new enterprise, Hamid, Anousheh and Amir Ansari helped to finance the new Ansari X Prize competition"[17]. New commercial spaceports are being constructed at surprising rates. For example Texas has passed new legislation in preparation for creating two new spaceports, and "three telecommunications entrepreneurs from Texas have recently joined Space Adventures, Ltd."[18]. This is in addition to all of the spaceports already recently opened. We are witnessing an emerging new epoch of outer space development. Space tourism has been legalized through U.S. law, and space mining and space settlements have been and currently are being discussed as best suited for private-sector involvement.

ENDNOTES

[1] See "Achievements in Space, International Aspects of Exploration and Use of Outer Space, 1954-1962", *Senate Documents, Volume* 6, No. 1, 88th Congress, 1st Session, 1966.

[2] Only nine states (Australia, Austria, Chile, Mexico, Morocco, The Netherlands, Pakistan, Philippines and Uruguay) have ratified it and five states (France, Guatemala, India, Peru and Romania) have signed but not ratified. It only took five nations to enter it into force, took five years to get the five requisite signatures. Since the Moon Treaty was adopted by the consensus principle instead of widespread international acceptance, many space law scholars argue that it is not generally accepted as part of international law. Still, the Moon Treaty was enacted and is a UN Treaty.

[3] *Public Papers of the Presidents of the United States: Ronald Reagan, 1981* (Washington, D.C. General Printing Office, 1982) at 57.

[4] Although Eisenhower, Kennedy, Johnson, Nixon, Ford and Carter all had overseen, in conjunction with the Department of Defense, the "development and deployment

of various types of reconnaissance satellites" (Krug, 1991: 74), President Reagan issued considerably more Presidential Directives and policy statements than any of the former U.S. President.

[5] During Reagan's Presidency there were several leaders of the Soviet Union: Leonid Brezhnev (1964-1982), Yuri Andropov (1983-1984), Konstantin Chernenko (1984-1985) and Mikhail Gorbachev (1985-1991). With the exception of Gorbachev, each played insignificant roles in outer space development.

[6] Bilateral "Agreement Between the United States of America and the Union of Soviet Socialist Republics Concerning Cooperation in the Exploration and Use of Outer Space for Peaceful Purposes" entered into force on April 15, 1987. The 1977 version of this agreement had been allowed to expire in 1982. This agreement committed the two states to "carry out cooperation in such fields of space science as solar system exploration, space astronomy and astrophysics, earth sciences, solar-terrestrial physics and space biology and medicine" and to "encourage international cooperation in the study of legal questions of mutual interest which may arise in the exploration and use of outer space for peaceful purposes".

[7] For more information on the ITU's allocation of orbital slots in the geostationary orbit see Keven V. Cook (Spring, 1999) "The Discovery of Lunar Water: an opportunity to develop a workable moon treaty" *Geo. International Environmental Law Review 11*, 647.

[8] Public Law No. 104, 110 Statute 56; also see H.R. Conference. Rep. No. 104-458, at 1 (1996).

[9] For a detailed critique of the WTO practices and the process of privatization and commercialization of satellite telecommunications see Serrano Virginia Rodriguez (2000) *Trading with Space Resources: The Forces of Privatization and Commercialization Applied to Satellite Telecommunications Through ITU and WTO*, Dissertation, McGill University (Canada).

[10] This Act is also known as the Patent and Trademark Office Efficiency Act as well as the Anticybersquatting Consumer Protection Act; S1948/H.R.1554-H.R.3194, 106th Congress, 1st Session, November 17, 1999.

[11] See Jason Bates (December 27, 2004) "U.S. Government Approves Sale of Intelsat to Private Equity Group" Space News Business Report at http://dev.space.com/spacenews/satellitecomm/intelsat_122704.html.

[12] Refer to U.S. Senate report, *Documents on International Aspects of the Exploration and Use of Outer Space*, 1954-1962, a Staff Report prepared for the Senate Committee on Aeronautical and Space Sciences, May 9, 1963, GPO, Washington, D.C. at pp. 51-52, 55-56, 62-64, and other communications in those pages for examples of letters exchanged between U.S. President Dwight Eisenhower and U.S.S.R. Premier Bulganin. See also C.Q. Christol, *The Modern International Law of Outer Space*, 12-14 (New York: Pergamon Press, 1982); A.G. Haley, *Space Law and Government*, 313-314 (New York: Appleton Century Crofts, 1963) and M.S. McDougal, H.D. Lasswell and I.A. Vlasic, *Law and Public Order in Space*, 205-210 (New Haven: Yale University Press, 1963).

[13] This may later prove to be problematic since the grant of ownership rights to outer space including the Moon or any other celestial bodies, arguably contradicts legal norms established by international law. During the first epoch, international space law treaties and UN declarations agreed upon by an international community of approximately a hundred nations, deemed the outer space territory as a public or commons territory. The international community of nations specifically granted freedom to use outer space to the *province of mankind*, and determined that any such uses would be for the benefit of all mankind. This includes both the resources and the territories.

[14] See the Report of the President's Commission on Implementation of U.S. Space Exploration Policy: *A Journey to Inspire, Innovate and Discover*, ISBN 0-16-073075-9, (U.S. Government Printing Office, Washington, D.C.) (June 16, 2004). In February 2004, President Bush announced a New Vision for U.S. Space Exploration Policy. He also created a commission, the President's Commission on Implementation of United States Space Exploration Policy to advise him on matters of space travel including the Moon, Mars and other celestial bodies, and mandating the holding of a series of public hearings regarding the future of the U.S. space program in addition to creating a new U.S. Space Transportation Policy in January 2005.

[15] http://www.iafastro-iisl.com.

[16] This photo appears on pages 2-3 of the (Spring 2006) *Ad Astra*, explaining that "on December 13, 2005, Sir Richard Branson and Governor Richardson announced a partnership to build the world's first Spaceport in the state".

[17] John Schwartz (February 18, 2006) "More Enter Race to Offer Space Tours" *NYTimes.com*.

[18] Id.

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