

**IAC-07- E.6.1.7****From Asian Politics to Astropolitics:  
The History and Future Shape of Asian Space Policy**

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**ABSTRACT**

During UNISPACE III in 1999, the UN Secretary General Kofi Annan called Earth “A tiny sanctuary of life in the midst of the magnitude of the heavens, an oasis beset by rising sea levels, deforestation, pestilence and war.”<sup>1</sup> With current patterns of production and consumption untenable, space technology with myriad applications in health, education, disaster management, communications, and energy has been lauded as an essential tool for promoting sustainable development. These facts render global cooperation in space, including the proactive development of an appropriate legal framework, a primary imperative for policymakers. Yet, the 21<sup>st</sup> century is so far reminiscent of the 20<sup>th</sup> in that space remains an arena of both international cooperation and conflict. This paper will explore one microcosm of this phenomenon; Asian space cooperation. The central thesis is that Asia in particular has much to gain from cooperation in space, but the will to do so is still first and foremost a political act that is built upon the history and current state of Asian relations. The fight over property rights in space will be used as a case study to examine how this international competition is unfolding.

**I. Introduction**

As a result of the 1986 *Challenger* disaster in the Reagan Administration decided to create the Office of Space Commercialization and in so doing authorize all commercial launches to be conducted by the private sector with the responsibility in law remaining with the federal government. However, until recently the US aerospace industry has had to rely on direct and indirect government subsidy to make functioning in outer space profitable. As a result, the growth of this industry has been inhibited. In Asia though, there is historically a more collaborative government-industry relationship than in the US, and consequently the Japanese and Chinese

Space Agencies have been able to use subsidies that have helped create a thriving commercial space industry with a variety of technological spin-offs. What is more, while the Japanese space program has been plagued by delays until recently, as is evident with the launch of two taikonauts China is rapidly developing its space capabilities with implications on the political and economic relations of East Asia. Indeed, the astropolitical arena of space has seen resurgence. A dynamic shift in US space policy is now underway with implications on the Asian and the world space communities that will effect how space will be utilized in coming decades.

Stemming from the original 1967 UN Outer Space Treaty, a new wave of international agreements are also now

being discussed. Gold has been discovered on asteroids, helium-3 on the Moon, and magnesium, cobalt and uranium on Mars. Both in terms of the private sector and the competition between great powers, a new space race could be beginning that will affect everything from regional politics in Asia to the manner in which orbital space develops for a generation.

## II. International Efforts at Regulating Outer Space

Despite initial rapid development, efforts at regulating space have faltered. Telling lessons as to why this has occurred can be learned from studying how international law has regulated other special sovereignty areas (SSA's), including the deep seabed and Antarctica.

SSA's are defined as commons zones lacking national jurisdiction in which the international community has assumed the authority to regulate development. Each regime is unique but shares traits that have been both an impetus for disputes and a cause for collaboration in the international system. Exploring the development of these branches of international law, notably space law, is essential for understanding how they fit into international relations more broadly. This is especially true among the spacefaring powers such as the U.S., Russia, France, China, Japan and India. International space policy cannot be considered in isolation from the larger geopolitical environment. The task for space policy analysts is to craft strategies that advance certain values—free markets, limited government, and human rights—as human activities of all kinds expand into space. Space lawyers are then charged with working alongside

policymakers to embed these concepts into international treaties.<sup>2</sup> At issue is the necessity for a generally accepted international political, legal, and regulatory framework to promote the harmonious use of space for peaceful purposes, scientific advancement and economic development.<sup>3</sup>

Since its inception following the launches of 2 Sputniks in 1957, international space law has created a whole new field of legal terminology that has challenged national governments and international institutions to redefine ideals for space operations. Though exploration of this topic began as early as 1932, the five principal space law treaties were signed between 1967 and 1981.<sup>4</sup> These were the first international treaties to employ the terms “mankind” and “people” rather than “states,” “nations,” or “international community.” They also affirmatively recognized the quasi-subject status of non-governmental organizations (NGO).<sup>5</sup> Space law considers the welfare of people as the beginning and end of all human activity and recognizes humans as the holders of fundamental, non-transferable human rights. This puts it at odds with traditional notions of Westphalian sovereignty by limiting the positive rights of states, raising the profile of non-state actors, and fettering commercial development. Article II of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space (the “Outer Space Treaty” or OST) is most relevant.

The OST, dubbed the Magna Carta for space,<sup>6</sup> states that “Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any

other means.”<sup>7</sup> Interpreting Article II has engendered debates among academics and policymakers. Some see it as giving private interests freedom of action in space, so long as a government supervises.<sup>8</sup> Others see this clause as a hindrance to economic development as great as the cost of accessing space (approximately \$10,000/pound) by voiding property rights and making entrepreneurs less apt to invest.<sup>9</sup> The center is composed of those who feel that the legal framework will ensure sufficient protection to private entities, safeguarding commerce rather than hampering it.<sup>10</sup>

This trichotomy of views is important since celestial bodies such as the Moon and the asteroids have vast amounts of untapped natural resources. New industries promising unlimited energy could be developed, necessitating a well-defined legal regime. This requires a re-examination of sovereignty, property rights, and the legal concept of the ‘common heritage of mankind’ (CHM) that has its beginnings in the as a guiding principle for international regulation of common resources in the Law of the Sea Convention, and then appeared in Article 11 of the Moon Agreement.

A ‘commons’ is broadly defined as a territory with resources that are not privately owned. At the international level, for a commons to be developed, international management is required. Article II of the OST states that the resources of outer space cannot be appropriated, and since the mining of non-renewable goods is a way of appropriation, it is forbidden.<sup>11</sup> A state may be held internationally responsible for this violation. This ban on appropriation has proven unpopular in

the private sector and with sympathetic governments, such as the US and Japan.

Although a cornerstone of international space law, Article II of the OST, and the 1979 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Treaty), is seen as an unwarranted intrusion on the rights of the private sector to conduct business.<sup>12</sup> The impact of space privatization and commercialization is already having an effect on this debate reflecting the transition from the old to a new dynamic global economy in which non-governmental organizations have expanded roles.<sup>13</sup> If arguments advanced by groups such as United Societies in Space (USS) who contend that space is a free market frontier are successful in national legislatures, the future of outer space as the common heritage of mankind could for better or worse become intertwined or subordinate to a commercialized final frontier.<sup>14</sup>

National space laws are a valuable vehicle for developing a culturally relative theoretical framework to aid in explaining the differing approaches towards commercialization and property rights in SSA’s evident in the international community. Contrary perspectives are especially apparent when comparing developed and developing countries, though a substantial East-West divide is also prevalent. An analysis of national legislation pertaining to space will be used to categorize governments into three camps: liberal institutionalists (certain members of the European Space Agency and much of the developing world), market rationalists (the US and Japan), and communal neo-realists (China and India). It will be possible to see how the varying cultures of these

countries have and are influencing their foreign policies, and how this impacts upon the manner in which these nations associate and recognize one another's sovereignty. This also illuminates the difficulty that international law has in providing a cohesive, uniform approach to space within this divergent culturally relative paradigm.

Sovereignty began at the royal sovereign, and then devolved to the nation-state. Now it is devolving further, as seen in international humanitarian law literature, to individual citizens. This is one characteristic of the post-Westphalian nation-state system. SSA's are part of the global, and universal, commons. They are governed at different levels by the CHM principle. As such, sovereignty is communal. This has recently changed with the deep seabed, as will be seen by examining the re-negotiation of the United Nations Convention on the Law of the Sea (UNCLOS). Such a transition has not yet occurred in outer space, though it is arguably in the process. Its pace is a product of political economy, as popular attention is not yet engaged since SSA resources have only an indirect bearing on people's lives. Still, many forward-thinking individuals call for the abolishment of the CHM in favor of seeking equity of participation in exchange for equity of benefit distribution.

Though most resources are now relatively cheap, this could change as resource competition intensifies, especially among the world's great powers. This transition can already be seen with Russia's dramatic claiming of what portions of the Arctic as what they contend to be their territorial sea. Another manifestation of this is the NASA Vision for Space Exploration

(VSE) and its interplay with the Chinese Space Program. The ultimate redefinition of sovereignty in SSA's will depend on US-Sino relations. Depending on developments, this could either usher in a 'happy convergence of interests' as during 'the golden age of space law,' or begin a second space race.

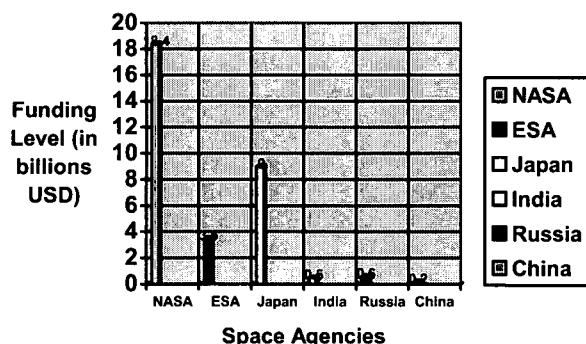
There is also a dramatic transition underway in international space policy from being governed by Cold War competition to market pressures, scientific endeavors, international cooperation and multipolar competition. Though the Space Age is almost 50 years old, the most challenging years lie ahead.<sup>15</sup> The Shuttle will be retired in 2010 if not before. The International Space Station (ISS) will soon be assembled.<sup>16</sup> These advents prompt looming questions. Will the Americans, Russians, Europeans, Japanese, Canadians, and others continue to cooperate in space? How will international space law need to transition, specifically in its definitions of exclusive use and property rights, to accommodate greater private sector activity in space?

This paper will develop a theoretical framework as a lens for examining Asian space policy. At the end of this examination of the current tensions between sovereignty, proprietary rights and the law of SSA's, this paper will demonstrate that it has been international politics and interrelated foreign policy considerations that first and foremost drive forward this area of national and international law. Solutions will be political and legal rather than technical by nature, and so fall into the realm of international relations.

### III. International Space Policy: A Comparative Look at the Principal Players

Astronauts and cosmonauts from 32 countries have traveled into outer space on US, Russian, and Chinese spacecraft. Virtually every nation on Earth is now reliant on satellites for communications, weather prediction, navigation, and remote sensing. To understand how the world's space programs may work together though, it is necessary to understand their history and current operating capacity.

Comparison: Principal Space Agency Budgets



The first major ESA launch series came with the *Ariane* launch vehicle in 1979. These launches were then and still are conducted by the French company, Arianespace, from Kourou, French Guiana, on the northern coast of South America. A smaller launch vehicle called the *Vega*, as well as Russia's *Soyuz*, will also begin launches from Kourou by 2010. The ESA announced plans to develop its own human space flight vehicle called the *Hermes* in the 1980s, but the program was terminated due to cost considerations. The ESA's 2003 budget was 2.7-billion euros, with a certain percentage earmarked for the Europe's Aurora program that envisions an

international human mission to Mars by 2025.

The Soviet Union launched the first satellite into space (Sputnik, 1957), the first person into space (Yuri Gagarin, 1961), the first space station (Salyut 1, in 1971) and achieved many other space "firsts." For the past nearly five decades, the Soviets and later the Russians conducted a broad space program similar to that of the United States, with spacecraft orbiting the Earth for scientific or applications purposes (military and civilian), probes sent to the Moon and Mars, and a robust human space flight program. Unable to develop a Saturn-V type launch vehicle in the 1960s to send cosmonauts to the Moon, the Soviets concentrated instead on Earth orbit operating seven space stations from 1971-2001. After the collapse of the Soviet Union, the Russian space program has an operating budget (\$526 million in 2004) roughly one tenth of its former Soviet windfall.

Russia's long-term space policy, according to Yuri Koptev of the Russian space agency, includes permanent manned bases on the Moon and Mars.<sup>17</sup> In April 2004, President Putin said that "space was and remains an object of our national pride...only by developing space industry can Russia claim leadership in the world."<sup>18</sup> With its history of research and development in long-duration spaceflight and nuclear reactor development, Russia has the potential to be a key international player in future space efforts in Asia and beyond.

Indo-U.S. space development cooperation dates back to 1963. India conducted its first launch in 1979, and typically launches once or twice a year with a budget of approximately \$450 million. India has three launch vehicles:

the ASLV for low Earth orbits, the PSLV for polar orbits, and the new GSLV for launches to geostationary orbit. The latter of which India hopes to use to enter the commercial launch services market in the near future. In 2003, India announced plans to launch a robotic spacecraft to the Moon as early as 2007. India's President Kalam and Prime Minister Vajpayee have made statements alluding to the fact that the robot Lander is only one part of a more ambitious national space policy that could include eventual human space flights to Mars. On Indian Independence Day, August 15, Indian Prime Minister Atal Bihari Vajpayeeon stated that he could “visualize a scene, in the year 2021, when I will be 90 years old and visiting SHAR Space Port for boarding the space plane, so that I can reach another planet and return safely as one of the passengers. I foresee the Satish Dhawan Space Centre (SHAR) to grow into an international spaceport with a capability of enabling launches and landings of reusable launch vehicles.”<sup>19</sup>

Almost a decade ago, in its “Long Term Vision for Space Development,” the Japanese government set out as a basic philosophy regarding space exploration: “to enable access to the vastness of space and use the infinite potential of space as the common property of mankind.”<sup>20</sup> That Vision anticipated sometime after 2010 that there would be a permanent international lunar base on the Moon with Japan as a member nation. Japan has already taken the first steps towards this goal as part of its bold space exploration agenda, spending nearly \$9-billion USD to attain its space goals annually. In July 1998, Japan’s *Nozomi* spacecraft was launched to Mars, and in May of 2003 it also launched the *Hayabusha* (MUSES-C)

mission, which rendezvoused with an earth-crossing asteroid in late 2005. Coming missions include lunar penetrator probes and a reconnaissance satellite entitled SELENE that will focus on the discovering the origins of the Moon. Plans for probes to Venus and Mercury are also underway. However, due to a series of recent failures and reorganizations, Japan’s space program is now largely on hold pending investigations. “The Japanese government has also started discussing a review of a Diet resolution made 35 years ago on the principle of peaceful use of the nation's space program, and is exploring the possibility of widening the scope of space development to include national security and commercial purposes.”<sup>21</sup>

In October 2003 when China sent taikonaut Yang Liwei on a 21 1/2 -hour orbital mission, that nation joined the exclusive club of United States and Russia as one of only three states to have independently launched humans into space.. The feat was accompanied by reports that China wants to build its own space station and explore the Moon.<sup>22</sup> Chinese space authorities plan to send satellites and probes to the Moon three times before 2020, mainly to check for resources. Currently, approximately 1,000 staffers are working on China’s lunar programs with a budget of approximately \$176 million USD. “The space shot is China's third major milestone,” Zhahai said, comparing the Moon programs to China's first satellite launch and its first manned space launch. Despite an announcement after the launch, China scrapped a plan to put a man on the Moon for financial reasons, senior space program designer Wang Yongzhi told Chinese media in May 2004. He said China would pursue the

development of lunar satellites instead.<sup>23</sup> Chinese leaders question the rationale for going to the Moon in a dialogue that has so far gotten little attention in the US. "If China goes to the Moon because the United States and former Soviet Union have gone there, that would be wrong. The only real reason should be for resources," said Fei Binjun, vice chancellor of the Beijing University of Aeronautics and Astronautics. Yuan Jiajun, chief commander and president of the China Academy of Space Technology vowed that China would "establish a sound mechanism to commercialize its space technology."<sup>24</sup> Currently, China's space research mainly serves defense purposes. In the near future, however, it will increasingly be extensively used for civil service and to bring the benefits of technologies invented for space flight to Chinese citizens. Jiajun's comments were further indication China intends to be a major player in space.

#### **IV. Role of a Space Race in International Relations**

Compiling a list of contenders in a 21<sup>st</sup> century space race comprises the spacefaring powers of the present and burgeoning space programs. Although Russia is a likely candidate, the country's space program has faced significant cuts. European efforts have long been restricted by needing 15 member states to agree on goals, then on funding, and then on follow-through. This will be further complicated by the failure of the European Constitution that would have streamlined decision-making and increased funding.<sup>25</sup> Japan is now plagued with setbacks in its space activities. India has an aggressive space program, but Indian politicians share the

concerns of their US counterparts: in a democracy, space is positively viewed by the public but considered expendable relative to other spending areas.<sup>26</sup>

China is not a democracy, though even the PRC cannot ignore public opinion with 87,000 protests circa 2005.<sup>27</sup> It has the engineering potential, foreign exchange reserves (estimated at over \$800 billion) and possibly the political will to stay the course in space development. The United States' response to China has been varied but has followed political fault lines.

These arguments are reminiscent of the Carter and Reagan Administrations stance towards international space cooperation with the USSR. Then, as now, nuclear non-proliferation and human rights concerns were underscored as a hindrance towards bilateral cooperation. The Reagan Administration labeled the USSR as the 'evil empire' and galvanized competition through its Strategic Defense Initiative "Star Wars" space weaponization program. With debate about the China threat thesis intensifying, future bilateral space cooperation between the US and China is contentious along similar lines. Relative US ambivalence to Chinese space successes could stop with the spectacle of Chinese taikonauts landing on the Moon, eliciting similar visceral responses as Soviet plans did a generation ago.<sup>28</sup>

Historian Stephen Pyne has argued, "Exploration is a specific

invention of specific civilizations conducted at specific historical times. It is not ... a universal property of all human societies."<sup>29</sup> Fifteenth century Ming China is an often-cited case study.<sup>30</sup> Arguably China sees itself as regaining lost glories by setting out on new voyages, not over vast oceans, but 62 miles into outer space. This could be the prelude and rationale for a new space race.<sup>31</sup>

Discovering China's motivations is complicated given that the country is so large and complex that one can look and find support for any thesis, from rekindling national prestige to promoting defense. The successful launch of taikonauts into outer space makes China only the third country to have done so: no European country, or Japan, can claim such a feat. China's military will benefit from the dual-use nature of space activities.<sup>32</sup> Chinese space efforts will likely include militarization, but will they also weaponization?

The US 'Space Commission Report' surmised that since air, land, and sea become battlegrounds, space will, too.<sup>33</sup> This viewpoint is shared by General Joseph Ashy, Commander-in-Chief of US Space Command, stating, "Absolutely—we're going to fight in space."<sup>34</sup> As Romancov argued a generation ago, "There can be no doubt about the huge potential of space for the future of mankind."<sup>35</sup> The placement of weapons of mass destruction in orbit as well as military installations on celestial bodies was banned by the OST.<sup>36</sup> However, the OST did not deal with offensive space weaponry generally. If the US continues to exploit its military advantages and China feels compelled to respond, a space race of some sort seems inevitable. It may make China the third man in the fourth battlefield.<sup>37</sup>

Opportunities abound though for cooperation. Unlike the USSR, China officially adheres to the international principles of space cooperation upholding international law and that space resources should be used for the benefit of all mankind. Since 1985, China has established long-term cooperative relations with a dozen countries.<sup>38</sup> The objectives of these agreements are diverse and differ markedly from Soviet space designs.<sup>39</sup>

NASA is taking a cautious tone with China. NASA's VSE bars the bilateral development of launch systems, only dealing with on-site cooperation. The Chinese space program is popularly perceived as a threat to US interests. Although a natural reaction, a deeper partnership would make the success of the NASA VSE, a ban on space weaponization, and a resolution to natural resources in SSA's much more feasible.

## V. Space Power and Asian Politics

Space programs are a national source of pride and prestige. At best, they can engender healthy cooperation or competition between countries that push back the frontiers of science, aids strained relations between the great powers, and is a source of international solidarity in divisive times. As the US President Lyndon Johnson said in 1959, "Men who have worked together to reach the stars are not likely to descend together into the depths of war and desolation." At worst, the rockets developed to reach orbit can be turned on a nations' enemies.

From its inception, space programs have been linked to broader foreign policy and national security



objectives. Most cooperation in space today is a political act used to further these ends. This can be seen by the recent surge in Indo-US space cooperation through the NASA Vision for Space Exploration (VSE). This cooperation is touted by both sides as a way to deepen Indo-US ties, exemplified by the recent successful return of Sunita Williams on the Space Shuttle after her historic six months aboard the International Space Station (ISS).

The Indian, Chinese, and Japanese space programs should follow NASA's lead and form alliances with one another to further the causes of regional security and nuclear non-proliferation. There has never been a joint Indo-Japanese, or Indo-Chinese space mission. This is despite the fact that Asia has a significant and expanding role in space. With China's deep pockets and manpower, India's IT prowess and new launch systems, and Japan's technical abilities and high-technology, nothing stands in the way of reaching these common goals except political will.

Forming alliances in space spurs economic development and helps the cause of Asian regional security. Moreover, the iconic image of Indian, Chinese, and Japanese astronauts shaking hands in space would be reminiscent of the 1975 Apollo-Soyuz handshake. This is to say nothing of Indian and Pakistani astronauts performing such a feat. Such an act could help usher in a new era of Asian collaboration that could lead to other joint initiatives, even nuclear non-proliferation. As former NASA Administrator Webb said, "international collaboration in space diverts to peaceful endeavors technology just as well suited to nuclear weapons delivery." With

Pakistan set to resume testing nuclear materials at Khan Research Laboratories, Asian governments would be well-advised to use space to diffuse tensions here on Earth. The ISRO, JAXA, and the Chinese space programs should stop their isolation and follow the example of NASA which over 40 years has concluded more than 4,000 agreements with 100 countries. Space is a political sphere, one with an enormous potential for peace. So far, in Asia, this potential has been underutilized. In the region's efforts to address this deficit, it would be wise to review NASA's strategy regarding international relations as propounded by Arnold W. Frutkin in 1965.<sup>40</sup>

Without deep partnerships, China and potentially Japan will be more inclined to go forward with individualized goals. The dangers of this practice may be seen by China's January test of a ground-based medium-range ballistic missile to destroy a weather satellite. If current trends continue, space weaponization will continue to proliferate, potentially touching off a space-based weapons race that will be a drain on all economies. The military use of space was not completely forbidden by the 1967 UN Outer Space Treaty, as is apparent by the existence of earth-orbit military reconnaissance satellites and global-positioning systems. Asian countries should work together, and with the US, to ensure that cooperation and commerce, and not conflict, drive space operations in the 21st century and beyond. Already, the degree to which this process is taking shape may be seen in each country's national legislation.

## **VI. Analysis of United Nations Compilation of National Space Laws**

Authors have varied opinions for and against the establishment of property rights in space ranging from enthusiastic support to outright hostility. Some contend that the premature establishment of a property rights regime undercuts the development of space for peaceful purposes and for the benefit of all mankind. Legislators the world over are sympathetic to one or other of these arguments, the degree being dependent upon their country's political and economic orientation. Analyzing recent legislation passed in the major spacefaring and emerging powers will inform how this process unfolds. It will more generally be relevant to developing a theory of utilizing natural resources in outer space.

According to the OOSA Compilation of National Space Laws from the United Nations Nigeria Workshop on Space Law, 18 countries have passed 45 significant space acts or executive orders since the beginning of the space age. The most active governments, defined as those which issued three or more edicts during this period, have been: Australia (4), Brazil (3), France (3), Italy (4), Russia, (6), Ukraine (3), and the United States (7).<sup>41</sup> The comprehensive mission statements on national space activity passed in Australia, Canada, Chile and China that set out in detail national philosophies towards spaceflight are also relevant.<sup>42</sup> Together, the content of these decrees reveals how these national governments approach the issue of managing natural resources in special sovereignty areas. Spacefaring countries such as France, Germany, Japan, Israel, India, Russia, China and Brazil have economies that run the gambit in terms of being market or government-driven and fall at varying

points in the political spectrum. This is reflected in how these governments regulate commons areas. Through this lens, it is possible to gain new insights into how space will unfold as an astropolitical arena of international cooperation and conflict.

Space policies must fit within a state's national or applied laws, as well as within political and economic interests. As these vary, so too do the content and style of space legislation. Belgium has passed laws on the activities of launching, flight operations or guidance of space objects while Germany has been concerned with governing the transfer of responsibilities for space activities.<sup>43</sup> One common area of legislative action is promoting international space cooperation. Belgium, Canada, Chile, China, Russia, the Ukraine and the United States have all included such provisions in bills and executive orders. During the 1980's and 90's, much of these dealt exclusively with the ISS, such as the following passed by the House of Commons of Canada, "The object of this [the ISS] Agreement is to establish a long-term international cooperative framework among the Partners...for the detailed design, development, operation, and utilization of a permanently inhabited civil international Space Station for peaceful purposes."<sup>44</sup> Nations such as Chile have been incorporating these provisions to advocate the use of space for peaceful purposes and as a way to reinforce the channeling of international scientific, technological, and economic cooperation.<sup>45</sup>

Another important area, notably for Russia and the Ukraine, has been national bans on placing weapons of mass destruction in space or on celestial bodies.<sup>46</sup> By far the most recent and

prevalent phenomenon among these 45 decrees are the number related to commercial activity: nearly half implicitly and one fifth, numbering nine, directly.

### **A. Commercial Space and the Market Rationalist Approach**

The private sector has been a driving force behind the proliferation of domestic space legislation designed to stimulate competition and privatize government space operations. Although not universal, the list of countries with commercial space laws include most of the major spacefaring powers such as the US, UK, Russian Federation, Japan, Australia and China. The US Congress has been among the most proactive legislating bodies, specifically seen with the 1998 Commercial Space Act and the Commercial Space Competitiveness Act.<sup>47</sup> These acts include provisions dealing with the International Space Station but also comment more broadly on American-style capitalism, “A priority goal of constructing the International Space Station is the economic development of Earth orbital space... free and competitive markets create the most efficient conditions for promoting economic development.”<sup>48</sup> Such laws are to an extent the result of effective lobbying efforts.

Two of the groups that have been most active in pushing for a new, more ambitious and private sector-oriented space policy such as the NASA VSE have been the L5 Society and the National Space Institute. One of the most important impacts of the L5 Society has been its opposition to the Moon Treaty. Believing that the CHM would stifle development, the L5 Society hired Washington lobbyist and lawyer Leigh Ratiner to train a number of L5 activists in lobbying. Since there was no

lobbying in favor of the Treaty, it proved possible for a small but determined opposition to win the day.<sup>49</sup> This episode demonstrates the United States’ susceptibility to concerted lobbying as much as it does its position on market capitalism and weariness of overregulation and curtailed sovereignty. It also shows the potential for a few, well-funded and organized lobbying groups to influence national space legislation.

Japan is similar to the US in that its long-range space program calls for the average citizen to travel into space and to help other nations utilize space resources. The Japanese “Long Term Vision for Space Development” sets out a basic philosophy regarding space exploration: “to enable access to the vastness of space and use the infinite potential of space as the common property of mankind.”<sup>50</sup> Like the US, industry lobbying groups have been active in ensuring a market-oriented approach to negotiations. Article IV of the Japanese Aerospace Exploration Agency (JAXA) Charter states that “Commercial space development and utilization... is a primary aim of JAXA.”<sup>51</sup> Other nations with similar propensities would include the U.K., Italy, Germany, Austria, and Australia, and even arguably Russia.

### **B. Liberal Institutionalists**

In Europe, the Brussels institutions have expressed a strong desire for policy at the international level.<sup>52</sup> This has carried over to regulating outer space. “The need for an effective European space policy never has been greater,” said Philippe Busquin, the European Research Commissioner for the European Commission.

Much of Europe, as well as the developing world, can be deemed *liberal*

*institutionalist* insofar as establishing international regimes for the benefit of all humanity are deemed the solution to managing the commons. Australia, along with the other signatory nations of the Moon Treaty, is also a liberal institutionalist, going so far as to incorporate aspects of the Moon Treaty into its national legislation buttressing the CHM.<sup>53</sup>

### C. Communal Neorealists

China, and to a lesser extent India and Latin America, are representative of a third group as they are both developing countries and relative newcomers to outer space activities. Given the developing nation status of these two powers, they are naturally predisposed to supporting an international regime that promotes their economic development, similar to UNCLOS 1982 or the Moon Treaty. Both countries can now reap major benefits from space technology and resources still barred from the rest of the developing world. This special situation gives rise to their label as *communal neo-realists* in that they are sympathetic to the common benefit but place economic development first. Russia as well belongs in this grouping, given its history of state-sponsored development, weariness of limitations on sovereignty, prohibition on property rights during the Soviet era, and drive for rapid development. Given the substantial rising power of communal neorealists, this group requires special analysis using China's space policy, being the most robust, as a vehicle.

China's official philosophy regarding space activities was published in a 'White Paper.' In it, the Chinese National Assembly states that space technology "exerts the most profound influence on modern society...[and] has

become an important endeavor in the modernization drive of countries all over the world."<sup>54</sup> The Chinese government directs its space agency through a socialist market economic mechanism as part of a comprehensive development strategy that "shall meet a wide range of demands."<sup>55</sup>

Given that private property rights do not exist in Mainland China except in specially designated enclaves, it seems unlikely that China would choose to advance such rights in SSA's or in State-Owned Enterprises (SOEs). As China continues its transformation from communism to market authoritarianism, so too will its conception of property rights evolve.

China has participated in international space cooperation since the mid-1970s, and has since joined bilateral, regional, multilateral and international agreements. Starting in 1983, China acceded to the OST and three other principal space treaties. China is consequently bound by the provisions of the OST, though it has yet to sign or ratify the Moon Treaty. This refusal is despite the White Paper's call for international space cooperation based on "mutual benefit and common development,"<sup>56</sup> in keeping with Maoist philosophy, bringing into question China's true goals and interests.

The PRC's situation is comparable to India as both countries have active space programs and are increasingly free markets.<sup>57</sup> India's President Kalam and Prime Minister Vajpayee have made statements alluding to an ambitious national space policy.<sup>58</sup> The Indian Space Research Organization (ISRO) now has a deep relationship with NASA. This has been pursued on the US side for political reasons that will be discussed in Chapter V. India cannot

currently match China's economic prowess or potential as a space power.

The interplay between market rationalists, liberal institutionalists and communal neorealists will do much in determining the outcome of natural resource exploitation in SSA's. Loose coalitions could be formed between them, especially among market rationalists and communal neo-realists. The lack of agreement on new multilateral treaties will likely increase the importance of national space acts and bilateral agreements. Beyond philosophical differences, there are other variables that stymie multilateral space cooperation. To find out how this occurs, it is necessary to infuse the discussion with contemporary international relations in the seemingly unlikely areas of nuclear non-proliferation, economic development, and human rights.

## VII. Conclusion

The question for space policymakers posed at the beginning of this paper is whether or not competition in space still holds political payoffs comparable to Kennedy's pronouncements of the 1960's. If the fervor of the debates taking place in the US Congress, and their impact on US, Chinese and the public opinion of the other spacefaring powers is any indication, then to some extent this can be answered in the affirmative. International politics will continue to impact upon negotiating international space law as economic activity expands outwards. The outcome of deliberations now occurring in Geneva, Brussels, and Washington will determine what balance will be struck between public and private interests in the future policy environment for space commerce.<sup>59</sup>

For an international regime to be effective, it must satisfy the criteria of private industry, the needs of the developing countries and benefit from the political will of the spacefaring powers. Proposing a regime which clarifies the CHM principle would create the necessary stability. Practical application of the CHM has been fraught with difficulties as the developing and developed world have vied to have their views, governed by each country's unique political, economic and historical circumstance, become internationally accepted. After the Cold War and the ideological and political defeat of communism in the international system, communal sovereignty and socialism has given way increasingly to popular sovereignty and market capitalism. This transition has been shown through the guise of property rights in international law. International commons territories, such as the deep seabed, have gone from common heritage to (after 1994) market-driven commercial exploitation. A similar shift is arguably now underway in outer space.

As resource competition intensifies, this ideological battle comes into sharper relief. Liberal institutionalists favor an international regime along the lines of the ISA. Market rationalists prefer international management in line with capitalist principles. Communal neo-realists seek rapid economic development above all else. The differences between nations matter increasingly in how property rights in SSA's are resolved. The proliferation of bilateral agreements within and between these groupings over the proven power of multilateral consensus-building negotiations through COPUOS is threatening the traditional institutions of space law.<sup>60</sup> The degree to

which these groups cooperate, or come into conflict, will dictate the pace at which solutions can be implemented.

It has been demonstrated that it is politics, in the form of competition for national prestige and resources, as well as nuclear non-proliferation and human rights, more so than a laudable quest for scientific understanding that has catalyzed space exploration. This has been the case from President Kennedy's original proposals to President Bush's VSE. Resolving disputes surrounding international regimes that would govern the commons, and avoid its 'tragic' overexploitation, will require deeper negotiations comprising a myriad of contemporary political issues. Developing nations, led by countries such as China, India and Brazil will without doubt increasingly influence the trajectory and pace of these talks as power continues to diffuse from the US, Russia and Europe to new space powers and the private sector.

Outer space and other SSA's will be developed at some point in the future. In what manner, and to what extent, depends on the legal and economic

framework created in the next 20 years.<sup>61</sup> If compromises can be reached, the available resources have the potential to transform the human condition, as maintained by UNISPACE III, while preserving the commons for future generations. Such an advent will also avoid any deterioration of 'peaceful use,' and benefit international peace and security.

Communal sovereignty has reigned in SSA's. If this principle is pragmatically balanced with the needs of economic development perhaps through modified leasehold,<sup>62</sup> and if nations find opportunity in competition, then humanity's return to the Moon could be less a race than a peaceful march. The Moon will be a destination serving the development of science, the economy and the betterment of international relations. If such a scenario wins the day, then the quotation from Tennyson etched into the far wall of the U.S. Senate Science Committee's Chambers will ring true the world over, "For I dipt into the future, far as human eye could see, saw the vision of the world, and all the wonder that would be."

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<sup>1</sup> Proceedings of the Vienna Declaration on Space and Human Development; Vienna, Austria 1999: <http://www.un.org/events/unispace3/pressrel/e30pm.htm>. Last Visited: 17/05/06.

<sup>2</sup> Lambright, H. (2003). *The Future of Space Commerce. Space Policy in the Twenty-First Century*. Johns Hopkins University Press, Washington, D.C., p.11.

<sup>3</sup> Jasentuliyana, N. (1992). *Space Law: Development and Scope*, I.I.S.L.; London, p.2.

<sup>4</sup> Doyle, S.E. *Origins of International Space Law and the International Institute of Space Law of the International Astronautical Federation*, Univelt, San Diego, 2002

<sup>5</sup> *Ibid.*, p.5.

<sup>6</sup> Doyle, S.E. *Personal Interview*. Member, US Delegation to the UN Outer Space Treaty, 1967. 4 April 2005. 8 June 2006.

<sup>7</sup> Treaty of Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, adopted by UNGAR 2222, opened for signature on 27 January 1967, entered into force on 10 October 1967, 98 ratifications and 27 signatures (1 January 2006).

<sup>8</sup> Doyle, *supra* note 5.

<sup>9</sup> Lambright, *supra* note 2, at 56.

<sup>10</sup> *Ibid.*

<sup>11</sup> Herzfeld, H. *Personal Interview*. Professor of Space Law. George Washington University Space Policy Institute. 15 April 2006.

<sup>12</sup> Doyle, *supra* note 5.

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- <sup>13</sup> Lambrigh, *supra* note 2, at 10.
- <sup>14</sup> United Societies in Space website: <http://www.angelfire.com/space/usis/>. Last Visited; 16/06/06.
- <sup>15</sup> Doyle, *supra* note 5.
- <sup>16</sup> Bilstein, R.E. (1989). *Orders of Magnitude: A History of the NACA and NASA 1915-1990*. (NASA SP-4406) Washington, D.C.: Government Printing Office, p. 12
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- <sup>19</sup> Logsdon, J., et. al., *Exploring the Unknown: Selected Documents in the History of the U.S. Civil Space Program* (NASA SP-4407). *Volume 2: External Relationships* (1996).
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- <sup>21</sup> Herzfeld, Henry. *Personal Interview*. February 18, 2005.
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- <sup>25</sup> Herzfeld, Henry. *Personal Interview*. February 18, 2005.
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- <sup>28</sup> *Ibid*.
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- <sup>30</sup> *Ibid*.
- <sup>31</sup> Johnson, J. (2005). China's Manned Space Program: Sun Tzu or Apollo Redux? *Space Politics*.
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- <sup>35</sup> *Ibid*.
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- <sup>37</sup> Johnson, *supra* note 30.
- <sup>38</sup> *Ibid*.
- <sup>39</sup> Logsdon, *supra* note 28.
- <sup>40</sup> Frutkin, A.W. *International Cooperation in Space*, Prentice Hall, Englewood Cliffs, NJ, 1965.
- <sup>41</sup> United Nations Nigeria Workshop on Space Law. Abuja, Nigeria. (2005, 21-24 November).
- <sup>42</sup> *Ibid*.
- <sup>43</sup> *Ibid*.
- <sup>44</sup> *Ibid*.
- <sup>45</sup> Supreme Decree No. 338 on the Establishment of the Chilean Space Agency.
- <sup>46</sup> *Ibid*.
- <sup>47</sup> *Ibid*.
- <sup>48</sup> H.R.1702 Commercial Space Act, 1998.
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- <sup>50</sup> Logsdon, *supra* note 28.
- <sup>51</sup> JAXA Law No. 161, 13 December 2002.
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- <sup>53</sup> *Ibid*.
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- <sup>55</sup> *Ibid*.
- <sup>56</sup> *Ibid*.
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- <sup>60</sup> Doyle, *supra* note 5.
- <sup>61</sup> Logsdon, *supra* note 28.
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