

# Program Research

Project

## UNITED STATES IN OUTER SPACE: SECURITY ASSURANCE AND PRESERVATION

BY

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**UNITED STATES IN OUTER SPACE: SECURITY ASSURANCE AND  
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by

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Topic approved by  
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## ABSTRACT

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Free access to-and-use of space assets by all nations in today's highly interdependent globalize society has been the long-standing policy of the United States dating back to the Eisenhower Administration. This point is espoused in the recent National Space Policy (2006) which commits to the "...use of outer space by all nations for peaceful purposes and...benefit of all humanity..." Yet the new policy also postures a unilateral tone and position that opposes the development of either new legal regimes or other restrictions that "...prohibit or limit US access to or use of space." Those restrictions include international arms control legislation, treaties, or resolutions that limit space weapon technology. This paper will first show how the current Space Policy is flawed by excluding multilateral diplomatic space-arms-initiatives, international cooperation, and ignores "common security" of other states. This one dimensional and self-fulfilling policy may increase asymmetrical threats to US space assets. The second part of this paper will use the recent Chinese anti-satellite test to constructively propose a basis for "non-armament treaties" using as examples the Incidents as Sea Agreements, the Bunn Initiative, and the Antarctic Treaty to forge non-threatening, transparent, confidence-building alliances that would address each state's security

concerns, allow for the continuation of the United States' defensive ballistic missile defenses, and maintain for all mankind the use of outer space for peaceful purposes.

## UNITED STATES IN OUTER SPACE: SECURITY ASSURANCE AND PRESERVATION

*The exploration and use of outer space...shall be for peaceful purposes and shall be carried out for the benefit and in the interest of all countries, irrespective of their degree of economic or scientific development... [The] prevention of an arms race in outer space would avert a grave danger for international peace and security.*

-Prevention of an arms race in outer space, United Nations General Assembly Resolution, A/RES/55/32, January 2001.

The United States National Space Policy (2006) clearly indicates the United States (U.S.) Government dependency and national security importance of outer space when it states "...freedom of action in space is as important to the United States as air power and sea power.."(reflective of the Joint Vision 2010 fourth medium of warfare doctrine<sup>1</sup>) and continues to stress that "...[the] United States considers space capabilities—including the ground and space segments and supporting links—vital to its national interests."<sup>2</sup> Space activities, led by the U.S. (the U.S. is responsible for 64% of world expenditure on the commercial uses of space and 95% of military space assets<sup>3</sup>), have enhanced life throughout the world through the development of civil and commercial activities and programs, improved meteorological forecasts, enhanced communications and information flow, improved educational opportunities, environment monitoring, global economic growth, navigation aids, and provided security and treaty verification for the benefit of a host of nations all in keeping with the spirit and intent of the 1967 Outer Space Treaty.<sup>4</sup>

However, the National Space Policy also articulates a unilateral strategy of protecting U.S. interests, rejecting future arms control agreements and "...opposes the

development of new legal regimes or other restrictions that seek to prohibit or limit U.S. access to or use of space.”<sup>5</sup> This opposition enables the U.S. to undergo research, development, and testing of space based anti-satellite weapons as a means to protect space predominance, national security, and national military and intelligence operations from potential asymmetrical threats.

This current strategy is short sighted. Space security is primarily an issue of global security and international multilateralism. Indeed, given how interdependent the world has become deployment of any space weapons platform would adversely affect national security, global commerce, and scientific endeavors.<sup>6</sup> It is imperative that the international space community find ways to build upon collective efforts and address areas of common interests and concerns. These efforts must also bridge the gap between national government’s space entities, military space agencies, and industry.

Security advantages previously enjoyed by the U.S. in innovative technology over the preceding decades is now gone or eroded and the gap narrowed. Using the history of nuclear weapons as an example, the first country to deploy this new weapon technology quickly saw its technological information stolen and compromised. Alternatively, co-operative international action was successful in preventing military competition and deployments from threatening potentially strategic area of international and scientific importance, carving out a protected sanctuary in the Antarctica.<sup>7</sup>

Space started out as a race between two countries; today that competition has been restrained leading to valued cooperation. This has opened space up as a global commons.<sup>8</sup> The U.S. has no other feasible alternative than international multilateral cooperation.<sup>9</sup> This paper will recommend options that will take into account current U.S.

ground-based interceptor ballistic missile defense programs and potential asymmetrical threat risks but the options will also ensure that outer space remains exclusively for peaceful purposes and for the benefit of all mankind.

### Background

*“...putting weapons in space may be the single dumbest thing I've heard so far... It would be a disaster for us to put weapons in space of any kind under any circumstances. It only invites other countries to do the same thing and opens up a whole new array of challenges and threats to national security...”*

-Sen. Thomas Daschle, Senate Minority Leader<sup>10</sup>

Formalization of the current U.S. outer space policy that rejects limitations on the access or use in outer space is found in a quartet of earlier policy documents starting with the 1996 U.S. National Space Policy<sup>11</sup>, “Vision for 2020<sup>12</sup>” document, USSPACECPM *Long Range Plan*<sup>13</sup>, and the 2001 Commission to Assess United States National Security Space Management and Organization (known as the “Rumsfeld Commission”)<sup>14</sup>. Each of these documents reserved the U.S. right to deploy anti-satellite weapon systems in space citing three principal justifications.

The first argument states that since the U.S. is the predominant space leader and relies heavily upon space assets, it is only “inevitable” that the U.S. exercise its stabilizing power by controlling outer space and thereby maintaining both its military and commercial dominance. This is the “flag follows trade” corollary where commercial expansion is protected by military might. This viewpoint was first mentioned by Mr. Keith Hall, Assistant Secretary of the Air Force for Space, when he stated in 1997 “...With regard to space dominance, we have it, we like it, and we’re going to keep it. Space is in the nation’s economic interest.”<sup>15</sup>

The second justification for space weaponization is to ensure that vulnerable U.S. military and commercial space assets are protected from a pre-emptive attack.

The U.S. commercial and military is more dependent upon space than any other country today. Estimates of revenues from commercial Global Positioning System (GPS) alone in 2003 were \$16 billion per year with estimates that in 2005 global telecommunications revenues would reach \$1.2 trillion.<sup>16</sup> The extent of damage that the loss of key satellite(s) would cause is illustrated by the failure of a Galaxy IV satellite in May, 1984. When the computer controlling the satellite broke down, 80 percent of U.S. pagers affecting over 37 million users went dead. Some radio and television stations went off the air, while gas stations and retail stores were unable to perform credit card transactions<sup>17</sup>.

To ensure protection of these space ventures and military assets the “Vision for 2020” document states ...”space systems...lucrative military targets, there will be a critical need to control the space medium to ensure U.S. dominance on future battlefields...to ensure space superiority.” The 2001 Space Commission continued to argue that the U.S. is vulnerable in space and must develop weapons in space to prevent adversaries from launching a potential “Space Pearl Harbor”. The Commission concluded that U.S. military capabilities needed to maximize space control capabilities, to deny such capabilities to potential adversaries, and that a restructuring of the national security space policy decision making process be brought under “deliberate leadership”.<sup>18</sup>

The last justification comes from the past two administrations’ position that the 1967 Outer Space Treaty is sufficient to prevent deployment of weapons of mass destruction in orbit and on celestial bodies. The Outer Space Treaty was the second multilateral “nonarmament” treaty drawn up by the Eisenhower Administration.<sup>19</sup> It

focused on the objective of prohibiting military competition (e.g. military bases, installations, fortifications, and military maneuvers), prohibiting nuclear weapons and any "...other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner", and ensured that the treaty would be used exclusively for "peaceful purposes" and for the "benefit and in the interests of all mankind..."

So, with the justification that the Outer Space Treaty "covered" weaponization of space, in June 2002 the U.S. withdrew from the 1972 Anti-Ballistic Treaty. However, Article Four of the Outer Space Treaty imposes only two primary restrictions as detailed above in the preceding paragraph: a ban on the placement of nuclear or weapons of mass destruction and the ban on establishment of any kind of military presence on celestial bodies.<sup>20</sup> Indeed, the negotiating history of the treaty focused primarily on the immediate concern of the parties in that day (i.e. nuclear) stemming from the Cuban missile crisis.<sup>21</sup>

The Anti-Ballistic Missile Treaty alone prohibited development, testing, or deployment of space based components of an anti-ballistic missile system. In addition, there are no limits on non-nuclear testing and no limits on testing against space targets from the ground, sea, or air. In spite of this loophole, the U.S. has staunchly opposed negotiations amongst the principal space-faring nations for a new space security framework that may limit the possibility of anti-missile systems from being operational or negotiations on limiting anti-satellite weapons.

Today, then, there are only three treaties that govern the use of outer space; the Outer Space Treaty; the Limited Test Ban Treaty that prohibits the testing of nuclear

weapons in space; and the Missile Technology Control Regime (MTCR). The MTCR, which is actually an export control protocol, is signed by leading space-faring nations in order to prevent proliferation of rocket technologies beyond a closed circle of countries already in possession of them.

### National Security Concerns

*If we want to maintain space dominance we have to innovate...Does an orbit periodicity that is well known to any adversary have any relevance today? What you really want is assured situational awareness, position location, and communications capabilities..."*

--Michael Wynne, Secretary of the U.S. Air Force<sup>22</sup>

On January 11, 2007 China used a projectile carried into space by a ballistic missile to destroy an aging Chinese weather satellite orbiting about 850 kilometers above the earth.<sup>23</sup> This action arguably provides rationale to support the U.S. policy position of not negotiating any further space agreements or treaties banning space weapons and continue in its deliberate acquisition of placing weapons in space.

However the test may also be interpreted as Beijing's attempt to stimulate the U.S. to drop its long-standing opposition to Chinese-Russian advocated drafts on a treaty for the prevention of deployment of weapons in space (i.e. an arms race in space).<sup>24</sup> Indeed most of the international community is on record in favor of preserving space as a weapons free sanctuary beginning with the United Nations General Assembly (November 29, 2001) voted 156-0 on a non-binding resolution to establish a basis for a treaty to ban space-based weapons. Again, a vote in October, 2006 saw a near-unanimous vote when 166 nations voted for a similar resolution. In both cases only the U.S. and Israel abstained or voted against the resolutions.<sup>25</sup>

Perhaps the Chinese test is an opportunity to address mutual international concerns and draft international legal instruments such as agreements or treaties that address “common security” for all nations. Russia and China have submitted in 2001, 2002 and 2005 draft outlines for a “Treaty on the Prevention of the Deployment of Weapons in Outer Space, [and of] the Threat or Use of Force Against Outer Space Objects”.<sup>26</sup> These papers proposed a treaty where signatories would be required not to place “any kinds of weapons” in space or resort to force or the threat of force against space objects. This would rule out attacks on spacecraft by land, sea, or air based anti-satellite systems.<sup>27</sup>

However, as arms control skeptics agree, even if these draft agreements “were useful”, the compliance of each nation would be difficult to verify and enforce. Indeed, U.S. Ambassador Christina Rocca in front of 65-delegates to the Conference on Disarmament (CD) questioned whether a space weapons treaty would include terrestrial-based anti-satellite weapons. She also suggested that verification difficulties posed immense problems and pitfalls for any treaty<sup>28</sup>.

As some pundits have insisted the continued Russian-Chinese working papers may be defensive blocking strategies that would prevent the deployment of weapons. It may just be a tactic to hamper U.S. power using “soft balancing” involving the use of nonmilitary tools to delay, frustrate, and undermine the U.S.<sup>29</sup> while secretly developing and expanding their own nations’ missile and nuclear capabilities which may be used to overwhelm American missile defenses.<sup>30</sup>

Deployment of space weapons coupled with preemption and preventive war policies as outlined in the National Security Strategy Document (2002) may provoke an

offense-defense spiraling space arms race or asymmetrical anti-satellite attacks from other nations in response to perceived security vulnerabilities. The U.S. can avoid this space “arms race”, protect its satellites and U.S. commerce by keeping its national missile defenses limited (focus on troubled regions where missiles threaten the U.S. homeland or its Allies) and by establishing “rules of the road” protocols for its activities in space.<sup>31</sup>

One such effective model comes from the prior negotiations for a code of conduct between maritime nations, the “IncSea Agreements”.<sup>32</sup>

#### “IncSea” Agreements

*“Any international approach to address space security needs to take into account both US concerns about the vulnerability of its military and space assets and also the concerns of other governments regarding their vulnerability to US military superiority.”*

-Rebecca Johnson, 2003<sup>33</sup>

“IncSea” Agreements are cooperative maritime security models designed to prevent inherently or inadvertently dangerous military activities or to contain their consequences by articulating codes of conduct, “rules of the road”, for military forces and mandates modes of consultation and communication in a crisis.<sup>34</sup> These measures enhance maritime stability and predictability eliminating mutual misunderstanding and reduced inadvertent conflicts at sea arising from misperception or mistaken reaction to other nations’ activities. The first agreement between the U.S. and Russia in 1972 have been replicated numerous times between countries’ replacing threats and counter-threats through the assumption that there is a maritime area of common interest (namely the avoidance of threats and military confrontations) between nations. These

cooperative measures offer numerous benefits that include: cost reduction through shared development or combined operations for humanitarian purposes, joint development of resources, protection of lines of communications, environmental prevention or cleanup of pollution sources, and the maintenance of communications when international tensions heighten.<sup>35</sup> These measures work well in maritime settings and could be applied to outer space environs especially if nations' missile defense programs mature.

Starting from the principles that all nations have a right to space access and these nations have the right to react (proportionally) to protect and defend space assets, these "Agreements" would aid with the development of policies and doctrines for both civilian and military satellites. It would enable the establishment of norms of behavior amongst space powers, define peacetime programs and obligations, and develop common security space operations guidelines.<sup>36</sup> These measures are not codified as treaties but take the form of "executive" agreements between national authorities thereby avoiding the cumbersome, long, and lengthy tortuous treaty process making this potential space "Agreement" a logical first step in avoiding incidents in space.<sup>37</sup>

Perhaps as a first step toward initiating these "Agreements", consideration of common interests amongst space-faring nations would provide the basis for initial progress. Utilizing military-to-military dialogue initially, since these "Agreements" were originally formed between naval forces, communication dealing with indiscriminate space debris may provide a common ground to mitigate mutual concerns to all satellite users, both military and civilian. These steps would increase international transparency

of space operations, enhance global security and confidence, and minimize risk of destabilizing strategic actions or activities through the use of formalized communication channels.

Another area of “cooperative security” for all nations advocated by the Henry L. Stimson Center’s Space Security Project that may be applicable using the “Agreements” is the negotiation of a code of conduct between space-faring nations that would prevent incidents and dangerous military activities in space. Key activities under this scenario would include a code of conduct for avoiding collisions and simulated attacks by nations upon other nations’ space assets; creating special caution and safety areas around all satellites; development of traffic management practices; prohibition of anti-satellite tests; provision of national reassurance through information exchanges, transparency and notification measures; and adopting more stringent space debris mitigation measures.<sup>38</sup>

These “codes of conduct” documents are widely accepted in international relationships providing compromising measures that utilize common areas of concern and interest to all parties helping to build and enhance confidence. They also provide a forum for international cooperation delineating codes of conduct amongst space-using nations. One such agreement has already been “drafted” and contains articles regarding collisions, special caution zones, dangerous maneuvers, traffic management, non-use of directed and kinetic energy anti-satellite weapons, communications, meetings, and other compliance related provisions.<sup>39</sup>

Another proposal that explores the “middle ground” between missile defense and arms control is based upon an earlier proposal by George Bunn, General Counsel to the Outer Space Treaty.

### The Bunn Initiative

Nuclear Non-proliferation Treaty negotiator and arms control analyst George Bunn came up with the innovative idea of a possible separation of the space issues from missile defense requirements. His idea was to allow in “lower earth orbit” regions of space (Bunn defined lower earth orbit as less than 2,500 miles above the earth; today, lower earth orbit is defined as altitudes between 200 and 930 miles above the earth<sup>40</sup>) weapons or ballistic missiles but ban these weapon systems from higher orbits in order to protect critical early-warning, communications, and information satellites.<sup>41</sup>

The core elements of a national and theater ballistic missile defense programs remain that of the direct-ascent, boost-phase missiles that utilize an integrated and layered interceptor approach against hostile missiles (engaging missiles at the boost, midcourse, and terminal phase of flight) but primarily using the low-earth orbit for its point of interception. The U.S. ballistic missile defense system is relying upon its network of satellites as sensors that will operate about 600 miles above the earth for better missile viewing angles and high resolution in order to detect and track missiles throughout their flight and relay necessary cuing data to other elements in the missile system.<sup>42</sup> The current land-based missile interceptors approach is to destroy incoming missiles in space after booster burnout but before the warhead re-enters the Earth’s atmosphere.

The core elements for a compromise delineating weapons in low and high orbits has been elucidated in Moltz's paper<sup>43</sup> and includes: banning the use, test, deployment or stationing of any weapons or interceptors in space above 500 miles; permit testing of ground, sea, and/or air-based interceptors in low-earth orbits (60-500 miles) against ballistic missiles passing through space; no testing of non-nuclear anti-satellite weapon systems (e.g. direct energy or kinetic energy systems) from land, sea, or air based platforms; and, no testing of any weapon system against any space-based objects.

However the importance of low-earth orbital satellites has exploded due to the development of cellular networks and increasing U.S. military dependence on reconnaissance, tracking, weather, and communications satellites in the same area of space.<sup>44</sup>

A compromise alternate to restricting space orbits was proposed by The Eisenhower Institute suggesting that all space orbits be equally shared. Instead of "banning" specific orbital zones, space assets like GPS, navigation, telecommunications, weather, and early-warning satellites would all be declared "global utilities" and given special international legal status.<sup>45</sup>

Demarcating low-earth orbits for missile defense would be presented only as a temporary compromise solution that may prevent an arms race in outer space.<sup>46</sup> It would require a multi-lateral approach with possible intrusive verification protocols and would require convincing India, Chinese, Pakistan, European Union, and Russia to agree to oppose the deployment and testing of space weapons. This scenario would protect civilian assets and manned space missions. It reduces the risks of pre-emptive attacks from anti-satellite weapons thereby addressing U.S., Russian and Chinese

concerns regarding vulnerability of its military and space assets while recognizing each country's long-term national security needs. It may be that widespread international support for this type of ban on ballistic missile attacks or space-to-earth weapon platforms will be of interest to all nations even though it may mean "accepting" the ground-based interceptor and certain mobile-land and sea-based systems as an interim measure.

By granting nations the right to attack missiles traveling through space but preventing nations from shooting from space or attacking permanent objects in space may provide the first step towards negotiating a multi-national Outer Space Treaty that prevents weapons, weapons research and development, testing, and platform staging in orbit.

However, this intermediate short term goal does not address either the future security of space or the relative simple means which nations' currently have available to attack another nation's space assets which does not involve anti-satellite weapons. Any system relying on ground-based midcourse or terminal ballistic missile interception would need to deal with countermeasures such as decoys mimicking warheads; saturation through multiple independently-targeted reentry vehicles; or chaff simply released to confuse any interceptor.<sup>47</sup> Indeed the simplest way to attack satellites and satellite-based systems involves asymmetrical electronic hacking and jamming attacks against terrestrial support infrastructures; disruption of computerized telemetric downlinks, tracking and control network and telecom exchanges all which may also affect the U.S. and global economic community as well as these military assets.<sup>48</sup> Perhaps, then the solution to prevent weaponization of space is to make space an open sanctuary similar to the Antarctic, the first multilateral "nonarmament" treaty.

## The Outer Space “Antarctic Treaty”

*Antarctica shall be used for peaceful purposes only. There shall be prohibited...any measures of a military nature...as well as the testing of any type of weapons.*

-The Antarctic Treaty, 1959

The Antarctic Treaty focused on preserving the continent as a non-militarized and nuclear weapon free sanctuary. It sought to prevent “colonial competition” and the possible damage that self-seeking exploitation would likely cause. Like the current debate on the future of outer space, the early Antarctica debate centered around scientific, economic, and military interests. The twelve initial states decided that the continent should be preserved for peaceful uses and those interests would be best protected through a legal arrangement rather than through the use or deployment of military forces.<sup>49</sup>

That the Antarctic Treaty laid down the foundation for the Outer Space Treaty is without debate. In fact Article 1 of the Antarctic Treaty is very similar to Article 4 part 2 of the Outer Space Treaty. The overall rule evidenced in both is that the Antarctic continent (a.k.a. space) shall be preserved for peaceful purposes for all countries. Indeed, after the Antarctic Treaty and the Outer Space Treaty limited the deployment of weapons of mass destruction in their respective environments, then the Seabed Arms Control Treaty (1972) successfully completed the prevention of weapons mass destruction deployment: first in space, then Antarctic continent, and finally the ocean floor.

Using the Antarctic Treaty as groundwork for a comprehensive Outer Space Treaty that prohibits weapons and weapon systems, arguably, has already been laid.

Indeed, if the model of the Outer Space Treaty follows the objectives of its predecessor treaty, then the use of the phrase “peaceful purposes” points to “non-weaponization” in space. This interpretation of the treaty is further enhanced when a 1957 proposal by the Eisenhower administration, endorsed by Canada, France, and the United Kingdom, sought “to assure that the sending of objects through space will be exclusively for peaceful purposes.”<sup>50</sup> The treaty also requires any state considering activities that would “cause potentially harmful interference” with other states’ activities undertake appropriate consultations. This phrase has been used to ensure non-interference with space assets by the U.S. However, other states or nations that are parties to the Outer Space Treaty may request consultations which would then lead to communication, negotiation, enhanced transparency of intent, reducing international tensions, and possibly leading to confidence-building accords.

The Outer Space Treaty legally created outer space as a territory beyond national jurisdiction and an international “commons” sanctuary. Applied to the national security field this status implies that security of space has to be with the “cooperative security” of all nations and “for the benefit of all mankind” [Article I of the Treaty]. It can therefore be argued that the “common interest” obligations already in the Outer Space Treaty encourage the pursuit of common security and cooperation a legal obligation in the implementation of the peaceful purpose standard in the use of the common space and in the interest of all states and humankind as a whole.<sup>51</sup> In view of the largely accepted current passive military uses of outer space, largely accepted and utilized by the international community, and the projected active weaponization of outer space,

both Article I (benefit of all mankind) and Article IX (principles of cooperation and due account of the interests of all nations) would lay the groundwork for negotiation of the multi-lateral “Treaty on Common Security in Outer Space”<sup>52</sup> and placement of this invaluable preserve into the same category as the Antarctic continent.

### Recommendation

The current U.S. Space Policy espouse themes of use by all nations for peaceful purposes and benefit of humanity keeping in line with the “spirit” of the Outer Space Treaty while posturing unilateral opposition of any legal regime (non-armament treaty) that may restrict its ballistic missile defense system and its research and development regarding directed-and-kinetic energy space weapons.

The Outer Space Treaty is an invaluable tool. For over four decades it has prohibited all types of weapons of mass destruction from outer space. But the current National Space Policy that opposes development of any new legal regimes may jeopardize this Treaty if new amendments are added that are contrary to the present national policy which then could cause the U.S. to abandon it or state that the Treaty is outdated. Therefore, since there are currently available internationally recognized measures that can be used to build-upon, strengthen, and address loopholes (not replace or amend) utilizing the basic framework outlined in the Outer Space Treaty a new international accord must be promulgated by the U.S.

This new agreement, or series of agreements, must be made transparently clear as it addresses 5 main principles: 1) It should not allow use, testing, or deployment of weapons or interceptors or any sort in space; 2) It will not allow stationing weapons of any sort in low-Earth orbit; 3) It will not allow testing or use of lasers from ground-, sea-,

or air-based platforms against any space-based orbital objects; 4) It will not allow testing or use of other ground-, sea-, or air-based weapons against satellites or other space-based objects (this is a confidence-building and space debris-reduction measure against direct-ascent missile defenses); and, 5) It will address verification and monitoring procedures of this dual-use technology that allows us to utilize both space platforms for scientific or commercial uses or orbital weapons carriers.<sup>53</sup> Indeed, this last principle was addressed over 50 years ago when dealing with nuclear weapons verification. Following the historic "Atoms for Peace" initiative of President Dwight Eisenhower, speaking before the General Assembly of the United Nations in 1953, the United Nations designed a special set of rules, safeguards and means of verification to drastically limit the risk of the dual uses of nuclear energy. Even if imperfect a similar potential framework that encourages international consensus to establish a set of rules for space could be established.<sup>54</sup>

By creating this new proposal the U.S. will "unilaterally" renounce its intention to develop, test, or use space weapons. Since it is technologically difficult to separate out the difference between anti-satellite weapons production, testing, and deployment the U.S. should also renounce both its Ballistic Missile Defense program and its space weapons program in order to clearly demonstrate that it intends to prevent weaponization of space. It will create another "weapons free" sanctuary. With our current relative dominance in space it gives the U.S. unique credibility in leading a multilateral international effort to limit space weapons, as the nation with presumably the most to lose.<sup>55</sup> It is in the self-interest of the U.S. and its "common security" interests to ensure that the first steps as world leader are to set high standards that address the

“common security” of each nation; develops confidence-building space operations “rules of the road”; includes clear and set communication channels; ensures that any Agreements are recognized by the International Court of Justice; and, leads to the eventual prohibition of all weapons in space.

### Conclusion

Space is the ultimate high ground for U.S. military and commercial use, control, and domination. But space was set aside as the second multilateral “nonarmament” treaty for use by all nations for peaceful purposes and for the benefit of all humanity. The world has become an internationally globalized and interdependent society such that the U.S. has no real option other than choosing to work multilaterally with all space-faring and space-utilizing nations. The U.S. as the lone hegemonic superpower must lead by example in the international world forum. The U.S. must choose to ensure that its national security interests and those of other nations follow international treaties, international law, and international codes of conduct ahead of its unilateral preemptive and preventive war policies that would weaponized space. The international community is looking for responsible leadership (a country that practices what it preaches without double standards) that adheres to international law and treaties and leads in the right direction.

By choosing to propose new Outer Space Agreement(s) that preserve the sanctuary status of Outer Space, with its sister Antarctic treaty, by banning all types of weapons addresses U.S. concerns regarding the vulnerability of its own military and commercial space assets by dampening the spiraling space arms race between itself and China, Russia, India, and Pakistan. It also addresses concerns regarding effective

verification and monitoring under a variety of arms control accords that ensure the “common security” of each nations’ borders and providing the capability of detecting activities that currently may develop weapons of mass destruction that threaten all nations during this worldwide war on terror.

## Endnotes

<sup>1</sup> United States Space Command, *Vision for 2020*, (February, 1997) available from <http://www.fas.org/spp/military/docops/usspac/visbook.pdf>; Internet; accessed 5 July 2006.

<sup>2</sup> National Science and Technology Council, U.S. National Space Policy (Washington, DC; The White House, 31 August 2006) available from < [http://www.ostp.gov/html/US% 20National %20Space% 20Policy.pdf](http://www.ostp.gov/html/US%20National%20Space%20Policy.pdf) >; Internet; accessed 20 March 2007.

<sup>3</sup> Rebecca Johnson, “Space Without Weapons: Ballistic Missile Defense and the Weaponization of Space”, *The Acronym Institute*, September, 2003; available from <<http://www.acronym.org.uk/space/rejintro.htm#top>>; Internet; accessed 27 September 2006.

<sup>4</sup> *United Nations, Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies*, (Washington, DC; 10 October 1967) available from <http://www.state.gov/t/ac/trt/5181.htm>>; Internet; accessed 5 July 2006.

<sup>5</sup> National Science and Technology Council, U.S. National Space Policy.

<sup>6</sup> Michael Krepon and Michael Heller, “A Model Code of Conduct for Space Assurance”, *Disarmament Diplomacy*, 77 (May/June 2004); available from <<http://www.acronym.org.uk/dd/dd77/77mkmh.htm>>; Internet; accessed 15 March 2007.

<sup>7</sup> Johnson, “Space Without Weapons: Ballistic Missile Defense and the Weaponization of Space”, Internet; accessed 27 September 2006.

<sup>8</sup> Theresa Hitchens, *Disarmament Diplomacy*, 81 (Winter 2005); available from <http://www.acronym.org.uk/dd/dd81/81th.htm>; Internet; accessed 27 September 2006.

<sup>9</sup> Wayne S. Smith, “The Trend Toward Unilateralism in the U.S. Foreign Policy”, *Center for International Policy*, 22 May 2003; available from <<http://www.ciponline.org/oldprunil.htm>>; Internet; accessed 4 April 2007.

<sup>10</sup> Senator Thomas Daschle, *Truthout-Issues*, 8 May 2001; available from <[http://www.truthout.org/docs\\_01/0197.Daschle.Budget.htm](http://www.truthout.org/docs_01/0197.Daschle.Budget.htm)>; Internet; accessed 27 December 2006.

<sup>11</sup> National Science and Technology Council, *Fact Sheet: National Space Policy* (Washington, DC; The White House, 19 September 1996) available from <<http://www.ostp.gov/NSTC/html/fs/fs-5.html>>; Internet; accessed 18 December 2006.

<sup>12</sup> U.S. Space Command, Internet; accessed 5 July 2006.

- <sup>13</sup> USSPACECOM. *Long Range Plan*, 1998; available from <http://www.fas.org/spp/military/docops/usspac/lrp/toc.htm>; Internet; accessed 17 July 2006.
- <sup>14</sup> *Report of the Commission to Assess United States National Security Space Management and Organization*. (Washington, DC); Public Law 106-65; known as the 2001 Space Commission; available from <http://www.space.gov/docs/fullreport.pdf>; Internet; accessed 27 September 2006.
- <sup>15</sup> Keith Hall, Assistant Secretary of the Air Force for Space, speech at National Space Club (1997); available from <http://www.globalissues.org/Geopolitics/ArmsControl/Space.asp>; Internet; accessed 18 December 2006.
- <sup>16</sup> Michael Krepon, "Lost in Space" *Foreign Affairs*, 80, (May/June 2001): 6.
- <sup>17</sup> *Ibid*, 5.
- <sup>18</sup> 2001 Space Commission; Internet; accessed 27 September 2006.
- <sup>19</sup> George Bunn and John Rhinelander, "Outer Space Treaty May Ban Strike Weapons", *Arms Control Today*, vol. 32, no.5 (June, 2002); available from [http://www.armscontrol.org/act/2002\\_06/letterjune02.asp](http://www.armscontrol.org/act/2002_06/letterjune02.asp); Internet; accessed 27 December 2006.
- <sup>20</sup> Nader Elhefnawy, "The National Space Policy and Space Arms Control", *The Space Review* (November 27, 2006); available from <http://www.thespacereview.com/article/755/1>; Internet; accessed 27 December 2006.
- <sup>21</sup> Op Cit.
- <sup>22</sup> Vago Muradian, "Secretary seeks to Supersize Efficiencies As Force Shrinks", *Federal Times*, 2 October 2006, sec."Spotlight", 22
- <sup>23</sup> Daryl G. Kimball, "Space Security at the Crossroads: US Should Take Action", United Nations Association of the United States of America and the Business Council for the United Nations; *UNA-USA Publications* March 6, 2007; available from <http://www.unausa.org/site/pp.asp?c=fvKRI8MPJpF&b=2558235>; Internet; accessed 15 March 2007.
- <sup>24</sup> Wade Boese, "Chinese Satellite Destruction Stirs Debate", *Arms Control Association Online* March 2007; available from <http://http://www.armscontrol.org/act/200703/ChinaSatellite.asp?print>; Internet; accessed 15 March 2007.
- <sup>25</sup> Anup Shah, "World Agrees: Space for Peaceful Purposes", *Global Issues: Arms Control Online* October 26, 2006; available from <http://www.globalissues.org/Geopolitics/ArmsControl/Space.asp>; Internet; accessed 18 December 2006.
- <sup>26</sup> "Russia and China Introduce Draft Treaty on Space Weapons", *Disarmament Diplomacy* 66 (September 2002) News Review. Available from <http://www.acronym.org.uk/dd/dd66/66nr07.htm>; Internet; accessed 22 July 2006.
- <sup>27</sup> *Ibid*.
- <sup>28</sup> Boese, Internet; accessed 15 March 2007.
- <sup>29</sup> Robert Pape, "Soft Balancing Against the United States", *International Security* 30, no.1 (Summer 2005): 10.

- <sup>30</sup> Elhefnawy, Internet; accessed 27 December 2006.
- <sup>31</sup> Krepon, 6.
- <sup>32</sup> Ibid, 2.
- <sup>33</sup> Rebecca Johnson, "Security without Weapons in Space: Challenges and Options" Disarmament Forum, 2003; available from <http://www.unidir.org/pdf/articles/pdf-art2155.pdf>; Internet; accessed 5 July
- <sup>34</sup> Duk-Ki, Kim, "Cooperative Maritime Security in Northeast Asia", Naval War College Review, LII, No. 1, (Winter 1999), 12.
- <sup>35</sup> Ibid, 13.
- <sup>36</sup> Hitchens; Internet; accessed 27 September 2006.
- <sup>37</sup> Krepon, 5.
- <sup>38</sup> Krepon and Heller, 2.
- <sup>39</sup> Ibid, 3.
- <sup>40</sup> "What is Low Earth Orbit?" available from < <http://www.tech-faq.com/low-earth-orbit.shtml>>; Internet; accessed 2 April 2007.
- <sup>41</sup> James C. Moltz, "Breaking the Deadlock on Space Arms Control", Arms Control Association, April 2002; available from [http://www.armscontrol.org/act/2002\\_04/moltzapril02.asp?print](http://www.armscontrol.org/act/2002_04/moltzapril02.asp?print); Internet; accessed 20 March 2007.
- <sup>42</sup> General Accounting Office, "Missile Defense: Alternate Approaches to Space Tracking and Surveillance System Need to be Considered"; GAO-03-597 Missile Defense, Report to the Subcommittee on Strategic Forces, Committee on Armed Services, U.S. Senate, May 23, 2003, 4.
- <sup>43</sup> Moltz, Internet; accessed 20 March 2007.
- <sup>44</sup> Ibid.
- <sup>45</sup> Johnson, "Security without Weapons in Space: Challenges and Options", Internet; accessed 5 July 2006.
- <sup>46</sup> Ibid.
- <sup>47</sup> Johnson, "Space without Weapons: Ballistic Missile Defense and the Weaponization of Space", Internet; accessed 27 September 2006.
- <sup>48</sup> Donald Christy, United States Policy on Weapons in Space, Strategy Research Project (Carlisle Barracks:U.S. Army War College, 15 March 2006), 7.
- <sup>49</sup> Thomas Graham, "International Law and the Military Uses of Space", Disarmament Diplomacy, 63 (March-April 2002); available from <<http://www.acronym.org.uk/dd/dd63/63op1.htm>>; Internet; accessed 15 March 2007.
- <sup>50</sup> Bunn and Rhinelander, Internet; accessed 27 December 2006.

<sup>51</sup> Detlev Wolter, "An International Law Perspective on Common Security in Outer Space", *Disarmament Diplomacy*, 81 (Winter 2005); available from <[www.acronym.org.uk/dd/dd81/81dw.htm](http://www.acronym.org.uk/dd/dd81/81dw.htm)>; Internet; accessed 21 September 2006.

<sup>52</sup> Ibid.

<sup>53</sup> Moltz, Internet; accessed 20 March 2007.

<sup>54</sup> The Eisenhower Institute, "The Future of Space: The Next Strategic Frontier-An Overview", available from <http://www.eisenhowerinstitute.org/programs/globalpartnerships/fos/newfrontier/weapons.htm>; Internet; accessed 20 March 2007.

<sup>55</sup> Christy, 13.