POLICY, INFLUENCE, AND DIPLOMACY: SPACE AS A NATIONAL POWER ELEMENT

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This study represents my attempt to understand how spacepower can directly contribute to the fulfillment of United States' diplomatic objectives. While this type of discussion is not as sexy as determining how space forces can be better integrated into theater air, land, and sea forces, it does go to the heart of why we have military forces. The purpose of the armed forces is *not* to fight for the sake the fighting—the purpose of armed forces is to achieve policy objectives, and if necessary, do so by force of arms. Therefore, although the armed forces must always emphasize their unique contribution to policy attainment, namely the application of violence, they cannot ignore the broader perspective in which policy objectives are pursued in situations short of actual combat.

In working through these issues during the last year, I must acknowledge the guidance and assistance offered by Dr. Everett Dolman, my thesis advisor. His knowledge of space theory and its linkages to the traditional schools of thought within political science have been extremely helpful. While, hopefully, my memory of his description of the Spartan social system will fade over time, his contribution to this work will endure. My thesis reader, Dr. Jim Corum (Lieutenant Colonel, USAR), also provided excellent historical context and gave me an outsider's perspective on spacepower. In addition, Colonel Ed Strack (USAF), Colonel Bruce Dublois (USAF Retired, PhD), and Lieutenant Colonel John Williams (USAF Retired) were each kind enough to review drafts of this study and offer helpful suggestions and insights. Finally, I want to thank Mr. Ron Fuller of the Air University Library who was an excellent resource for finding research materials.

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ABSTRACT

This study investigates how United States space systems can be used to directly achieve diplomatic objectives. While space systems are widely acknowledged as vital enablers of terrestrial-based forces, they are often overlooked as a critical component of national power capable of directly pursuing national objectives. A brief review of space doctrine and policy from the Department of Defense, Joint Staff, Unified Command, and Air Force perspectives reinforces the thesis that space systems' ability to independently shape events and achieve objectives, beyond their support to terrestrial forces, is overlooked. Historical precedent for the use of space systems and other military forces in directly supporting diplomatic objectives is then established through case studies on Sputnik's effect on global affairs, the use of U-2 imagery during the Cuban Missile Crisis, and the use of the United States Navy as a tool of diplomacy. The study then presents the Space-Diplomacy model that posits seven facets to the diplomatic power of space assets and shows when they can be effective over the spectrum of conflict: prestige, technology partnerships, access to space services, legal precedent, objective information, presence, and threat of punishment. Based on the model, the study offers six ways in which the United States could better leverage its existing space assets for diplomatic advantage.

CONTENTS

Page

DISCLAIMER ii

ABOUT THE AUTHOR iii

ACKNOWLEDGMENTS iv

ABSTRACT v

INTRODUCTION 1

THE MILITARY AND SPACE ASSETS: THE CURRENT DOCTRINAL VIEW 9

HISTORICAL EXAMPLES: CASE STUDIES IN DIPLOMATIC LEVERAGE 26

SPACE ASSETS' INHERENT DIPLOMATIC POWER 52

RECOMMENDED DIPLOMATIC USES OF SPACE ASSETS 82

CONCLUSIONS 99

ACRONYMS 104

BIBLIOGRAPHY 106

Illustrations

Figure 1: Space-Diplomacy Model 55

Figure 2: Partnerships and Global Shaping 88

Chapter 1

Introduction

…to achieve a leading or even dominant space role, a nation must…develop the attendant national and military strategies and the policies that enable it to exercise and exploit space power.

--James Oberg

During the three decades after World War II ended, on the average, U.S. armed forces were used as a political instrument once every other month.

-- Barry M. Blechman and Stephen S. Kaplan

The purpose of this study is to examine the diplomatic potential of American space assets. While the criticality of space assets as enablers for land, sea, and air forces has been increasingly recognized since the 1991 Gulf War, relatively little attention has been given to the subject of how military space assets can be used to independently support United States' diplomatic efforts. As a tool of statecraft, defined by David Baldwin as "the art of conducting state affairs…it refers to the selection of means for the pursuit of foreign policy goals,"[1] space assets contribute to America's ability to project its power and to influence world events short of actual combat.

Although maximization of the force enhancement capacity of space assets is well acknowledged, exploration of the diplomatic potential of space assets is not generally accepted as within the purview of the Department of Defense (DoD). As the Executive department most knowledgeable about its own assets, however, and responsible through its regional Commanders-in-Chief (CINC) for shaping the global security environment in ways favorable to the United States, DoD plays an important role in advocating and achieving diplomatic goals. For this reason, the United States military needs to better appreciate how its space assets can be used to directly support diplomatic goals.

At the outset, this study will set aside what governmental department is best suited to set space policy—whether the Executive Office of the President, DoD, or some new organization. Whomever that might be, the purpose of this thesis is to investigate how the United States

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[1] David A. Baldwin, *Economic Statecraft* (Princeton, N.J.: Princeton University Press, 1985), 8.

ought to recognize and use the diplomatic potential of its space assets.

Underlying this study is the concept of how states exercise power. According to Baldwin, power is a relational concept and "can be defined broadly to include all relationships in which someone gets someone else to do something that he or she would not otherwise do. Both positive sanctions (actual or promised rewards) and negative sanctions (actual or threatened punishments) are means to exercise power."[2] States exercise their power through a number of means, but all these means have been categorized into four broad areas: "When the United States undertakes military operations, the Armed Forces of the United States are only one component of a national-level effort involving the various instruments of national power: *economic, diplomatic, informational, and military*. The instruments of national power may be applied in any combination to achieve national strategic goals in operations other than war. The manner in which they are employed is determined by the nature of each situation."[3]

Although the fourfold categorization of power instruments aids in analyzing statecraft, it is important to understand that the categories are not discreet. As such, it is not always clear-cut how a method of exercising power should be classified. For military forces in particular, while they are classified as military means for exercising power, they can achieve effects that are not only military, but also diplomatic, economic, and informational. This study, then, focuses on the intersection of the military and diplomatic instruments of power.

The use of armed forces for diplomatic purposes is not an unusual event. "Since the Second World War the United States has continually devoted substantial resources to the development and deployment of strategic weapons and conventional armed forces. It has done so not only to be prepared for war, but also to deter hostile foreign behavior, to reassure allies and other friends, and to deal with potentially dangerous contingencies. Faced with untoward developments, U.S. policymakers have often turned to the military to reinforce diplomacy and other means of achieving foreign policy objectives."[4] Further, armed forces have inherent qualities that allow states to use them as tools of diplomacy: "…the armed forces—by their very existence as well as by their general character, deployment, and day-to-day activities—can be used as an instrument of policy in time of peace. In peace, as in war, a prudent statesman will

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[2] Ibid., 20.
[3] Joint Chiefs of Staff, *Joint Doctrine Encyclopedia*, 16 July 1997, 337.

turn to the military not as a replacement or substitute for other tools of policy but as an integral part of an 'admixture…of means.'"[5]

Space assets, just as other military forces, can exert power to achieve diplomatic effects. When deliberating how military space assets might do this, the most apparent manner is through dissemination of high-resolution imagery that can then be used to influence a diplomatic situation. While this is a critical component of space assets' diplomatic power, and will be discussed in this study, there are many other less obvious ways in which existing space assets can be used to secure diplomatic advantage. This work will examine both the obvious and the more obscure uses of space assets in the direct pursuit of diplomatic goals. The overall ambition is to find ways in which the United States' $100 billion investment in its current space assets can be more effectively used to directly pursue diplomatic goals while continuing to function as a critical force enabler for terrestrial forces.[6]

Background and Significance of this Work

Significant impetus for this research can be found in the 1 April 2001 mid-air collision between an American surveillance aircraft and a Chinese fighter that resulted in the American EP-3 making an emergency landing at a Chinese airfield on Hainan Island.[7] For 12 days, the Chinese detained the American crew of 24 personnel while intense diplomatic maneuvers occurred. Throughout the high level exchanges between the Chinese and Americans over who was at fault for the collision, both sides made claims to knowledge of what actually happened[8]—yet, except for a video tape that the United States released purportedly showing Chinese fighters flying close to an American surveillance aircraft on a previous mission, very

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[4] Barry M. Blechman and Stephen S. Kaplan, *Force without War: U.S. Armed Forces as a Political Instrument* (Washington, D.C.: The Brookings Institution, 1978), ix.
[5] Ibid., 4.
[6] "Space Chief Calls on Air Force to Prepare for Future in Space," *USSPACECOM News Release*, 23 April 1997, n.p., on-line, Internet, 3 January 2002, available from http://www.spacecom.af.mil/usspace/new9-97.htm.
[7] "U.S. Says China is Intercepting U.S. Military Planes in 'Unsafe Manner'," *CNN Online,* 1 April 2001, n.p., on-line, Internet, 3 January 2002, available from http://www.cnn.com/2001/US/04/01/us.china.plane.04/index.html.
[8] Ibid.; Chinese Foreign Ministry spokesman Zhu Bangzo claimed, "The direct cause to the crash of the Chinese plane is the United States plane violated flying regulations by suddenly turning toward the Chinese planes and bumping into one of the planes." "U.S. Defense Secretary: Chinese Pilot Harassed U.S. Crew," *CNN Online*, 13 April 2001, n.p., on-line, Internet, 3 January 2002, available from http://www.cnn.com/2001/WORLD/asiapcf/east/04/13/ air.collision.01/index.html; Following the release of the American personnel, Secretary of Defense Rumsfeld stated, "The F-8 pilot clearly put at risk the lives of 24 Americans. It was clear the pilot's intent was to harass the crew."

little proof was offered to substantiate these claims.[9] Unlike the aftermath of the Korean Air Lines (KAL)-007 shoot down by the Soviet Union in 1983 in which the United States released sensitive intelligence recordings of Soviet Air Force communications at the United Nations Security Council, the United States did not produce proof to bolster its version of what happened between the EP-3 and the F-8. While the American failure to provide substantial proof may have many valid explanations (e.g., the Bush administration did not consider the crisis of sufficient criticality to warrant possibly exposing intelligence sources and methods, or they may have made a judgment that release of the data would not significantly aid the on-going diplomatic effort), it did create the perception that proof was not offered because it did not exist (at least to those sympathetic to the Chinese claims). While we do not know at this point what proof the United States administration had to support its version of events, statements of American leaders indicated that some data existed, beyond the eyewitness reports of the crew and their radio calls, to help clarify the situation. With the example of the KAL-007 situation, and the Cuban Missile Crisis in which the public release of U-2 imagery of the Soviet missile bases helped turn the tide of international opinion, why did American leaders allege knowledge of Chinese actions yet fail to provide any proof of those allegations?

Given the global nature of space systems and their ability to provide information instaneously, the EP-3/F-8 incident leads to consideration of whether American military space assets could have been used to give the United States diplomatic advantage in the standoff. Considering the cases of KAL-007 and the Cuban Missile Crisis, it seemed apparent that under certain conditions the United States would use its military assets to directly secure diplomatic goals short of actual combat. Why the United States chooses, however, to use military assets for diplomacy in some situations and not in others appears to be largely situational or platform dependent. Some military assets, such as United States Navy carrier battlegroups, are recognized to have diplomatic potential and are regularly used to influence events around the world. One class of military assets, however, that has largely been unused on a systematic basis by the nation as a tool of diplomatic leverage is space assets. With the tremendous investment the nation has made in its space assets, can the United States leverage the diplomatic power of these assets to shape world events while still pursuing space assets'

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[9] "Talks Adjourn in Beijing," *CNN Online*, 18 April 2001, n.p., on-line, Internet, 3 January 2002, available from

traditional mission of enhancing and enabling terrestrial forces?

Limitations of the Study

Although this study looks at the importance of United States' recognition and use of the diplomatic power of its space assets, it is not another discussion on the proper organization of space capabilities within DoD. With the recommendations from the Space Commission less than 18 months old, and the actual implementation of those recommendations still on-going, it is premature to judge whether the recent organizational changes are working.[10] While that debate will be needed down the road, this work confines its discussion of space force organization to noting the policy difficulties brought about by the dispersed nature of American space operations.

Additionally, this study is not intended to imply that the armed forces establish foreign policy. This is clearly the Constitutional purview of the President, the Department of State, and their civilian advisors. The civilian political leadership of the United States formulates policy, although military personnel do advise these leaders. The primary responsibility of uniformed military personnel is executing policy, not defining it. Military personnel and organizations do influence the development of foreign policy, however, through the interagency process, through the military systems they develop and field, and through the conduct of the regional warfighting commands and their regional engagement activities.[11] For this reason, it is vital that military professionals understand the power of military assets to positively contribute to diplomatic objectives.

A further limitation of the study is the narrow historical base for the public use of space assets to directly achieve diplomatic goals. With the dawn of the modern space age in 1957, less than 45 years have transpired. Much of those 45 years were spent in the Cold War in

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http://www.cnn.com/2001/WORLD/asiapcf/east/04/18/china.negotiations.01/index.html.

[10] Space Commission, *Report of the Commission to Assess United States National Security Space Management and Organization* (Washington, D.C.: Government Printing Office, 2001). The report was approved on 11 January 2001, and the Secretary of Defense subsequently directed implementation of the vast majority of commission recommendations. The most significant organizational changes for the Air Force occurred when Space and Missile Systems Center was realigned under Air Force Space Command, the Air Force was designated the DoD Executive Agent for Space, and the Under Secretary of the Air Force was given responsibility as the Director of the National Reconnaissance Office and as the acquisition authority for space.

[11] For example, informed policy makers will only formulate policy consistent with what technical and operational capacity the supporting military units can sustain.

which space systems played a key role in keeping the peace, a fact increasingly being released into the public domain. It is reasonable to deduce that diplomatic uses of space assets occurred during that time period to a greater degree than has been acknowledged. However, the heavy classification attendant with many space systems has restricted public release of how these systems have directly supported diplomatic efforts. While the opaqueness that surrounds many of the contributions made by space systems is a limitation to the study, it also provides a basis for asking whether many of the traditional security restrictions surrounding space systems have become outmoded in a world in which one meter resolution imagery can be bought while sitting at a home computer.

RESEARCH METHODOLOGY

To undertake this review of the diplomatic power of space assets, this study surveys official doctrine and policy statements, academic works, political histories, journal articles, and recent news accounts. From these works, the study postulates what the diplomatic power of American military space assets is, and outlines ways in which that power could be practically used. While parts of the study summarize the current view of space assets by the American defense establishment, and other parts draw lessons from case studies regarding the diplomatic use of military assets short of combat, the heart of the work is focused on developing a taxonomy of the facets of diplomatic power that space assets can bring to bear. Then, using the taxonomy as a guide, the study makes recommendations on how to use space assets to achieve American diplomatic goals.

The criteria used to develop this thesis revolve around developing the categorization of space assets' inherent diplomatic roles and the recommended ways in which space assets can be used to achieve diplomatic goals. First, are there valid historical parallels between the uses proposed and current uses of other military assets? Since the public historical base of space assets being used to directly achieve diplomatic objectives is narrow, lessons might be learned from observing how other military assets have been used to support diplomacy. While historical cases can inform our current understanding of space assets' diplomatic power, they should not intellectually limit space assets' potential contribution. Since other classes of military assets do not share the unique attributes of space assets, and thus cannot precisely replicate the facets of space assets' diplomatic power, we must look beyond the historical cases

to fully comprehend space assets' diplomatic power. Second, can the United States take full advantage of the proposed diplomatic uses of space assets using its current force structure? Although other studies may speculate about future technologies that might be employed from space, the focus of this thesis is on the ability of the United States military's current space assets to directly achieve diplomatic goals. The final criteria used in the formulation of this thesis looks at whether the uses for space assets proposed are possible in light of contextual factors such as United States domestic politics, the global political environment, and space law. The use of these criteria tend to make most recommendations practical, yet also allows for more radical possibilities, even when implementation is unlikely.

ORGANIZATION OF THIS STUDY

This work is laid out to provide a systematic answer to why the United States needs to further recognize and use the power of space assets to directly achieve diplomatic goals. As a study in statecraft, then, it conforms to Baldwin's premise that "to study statecraft…is to consider the instruments used by policy makers in their attempts to exercise power, i.e., to get others to do what they would not otherwise do."[12] Using this approach, the thesis will highlight the current view of space assets in military doctrine and policy, and then examine three case studies for how military assets have been used in the past directly to achieve diplomatic goals. The thesis will then categorize the inherent diplomatic power of space assets and offer a number of ways in which current military space assets can be used to a greater extent to achieve American diplomatic objectives.

Chapter 2 (The Military and Space Assets: The Current Doctrinal View) reviews the current state of approved policy and doctrine (to include draft versions of those documents currently under review) at the national, DoD, Joint Chiefs of Staff, Unified Command, and Air Force levels. The focus of this review is to gauge how space assets are viewed at each level in terms of whether space forces exist strictly to enable and enhance terrestrial forces, or whether space assets are intended to be used as leverage to directly achieve American diplomatic goals. As a whole, this review of current doctrine and policy provides insight into how the United States military uses, and plans to use, its space assets.

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[12] Baldwin, 9.

Chapter 3 (Historical Examples: Case Studies in Diplomatic Leverage) examines the history of using military assets, short of combat, to provide the United States diplomatic advantage on the global stage. Specifically, the chapter will look at how the Soviet Union used Sputnik and the early space race to achieve diplomatic goals, how high-quality imagery was used by the United States during the Cuban Missile Crisis, and the effect the United States Navy has achieved in its forward presence role. The historical background will lay the groundwork for how the United States could use its existing space assets to directly achieve diplomatic goals.

Chapter 4 (Space Assets' Inherent Diplomatic Power) categorizes space assets' diplomatic power. Building on the historical examples in Chapter 3, this chapter will describe different aspects of military space assets that allow them to exert diplomatic power and secure advantages for the United States. Beginning with the first aspect of space assets' inherent diplomatic power, prestige, which was revealed following the launch of Sputnik, this chapter will discuss how space assets offer opportunities in technology partnerships, access to space services (both basic and high-end), legal precedent, objective information, presence, and threat of punishment—all of which can be used to secure diplomatic advantage.

Chapter 5 (Recommended Diplomatic Uses of Space Assets) makes recommendations on specific ways in which the United States can use its current military space assets to directly achieve diplomatic goals. The recommendations run the gamut from those easily implemented to others requiring a Machiavellian attitude not normally found in American foreign policy. While the purpose of the chapter is to make relevant recommendations that can be acted upon given today's space force structure, it also will explore the question of how we use space assets for gaining diplomatic leverage while protecting sensitive sources and methods.

Finally, Chapter 6 concludes the study by providing six key lessons. While Chapters 4 and 5 summarize space assets' diplomatic power, Chapter 6 builds upon the analysis in the preceding chapters to offer insights into broader issues of space policy. Taken as a whole, these three chapters seek to inform policy makers and military professionals on how to use space assets to directly achieve national objectives. By adopting a strategic view of how space assets can directly contribute to diplomatic goals, the military can present a more rounded doctrinal picture of space assets and better support their use as national power elements.

Chapter 2

The Military and Space Assets: The Current Doctrinal View

Therefore, it is in the U.S. national interest to…use the nation's potential in space to support its domestic, economic, diplomatic and national security objectives.

--Report of the Space Commission

Many [witnesses before the commission] believe the AF treats space solely as a supporting capability that enhances the primary mission of the AF to conduct offensive and defensive air ops.

--Report of the Space Commission

The United States military's current doctrinal view of space assets is two-fold. On the one hand, most official doctrine statements recognize that space assets are an "essential" pillar of American power and can influence events in their own right.[13] While this view is mentioned in doctrine at most every level, very little has actually been written, when compared to the use of aircraft carriers for diplomatic leverage, about how the United States can use space assets to actually influence other states (i.e., achieve diplomatic advantage). Although other governmental agencies are also concerned about how space assets can be used to directly achieve diplomatic objectives, this study contends that the military, as the owner/operator of the majority of national security space systems, drives how those assets will be used by its conception of their utility. As such, the lack of doctrine on how to use space assets to secure diplomatic objectives translates into a lack of action at the interagency level. Conversely, the second view of space assets is that they exist predominantly as a force enhancement tool to enable terrestrial forces to better accomplish the terrestrial mission. Clearly, this second view of space assets as enablers of terrestrial forces dominates military doctrine. While it is not surprising that military organizations focus on warfighting as the primary function of their

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[13] Department of Defense Directive 3100.10, *Space Policy*, 9 July 1999, 2; "The globally interdependent information- and knowledge-based economy as well as information-based military operations make information lines of communication to, in, through, and from space essential to the exercise of U.S. power." Joint Publication 3-14, *Joint Doctrine for Space Operations*, 13 April 2001 (Draft), viii. "Space power is the total strength of a nation's capabilities to conduct and influence activities to, in, through, and from the space medium to achieve its objectives." United States Space Command, *Long Range Plan: Implementing USSPACECOM Vision for 2020*, March 1998, Foreword. "Space is critical to both military and economic instruments of power—the main sources of national strength. We see space as an emerging area of vital national interest."

forces, it is perhaps startling that the ability of space assets to shape global circumstances to the United States' advantage (in a means short of actual combat) has not been studied more closely by the armed forces—particularly in light of national security and space policy.

The foundational document for American national security is *A National Security Strategy for a New Century*. Although this document was published by the Clinton administration, it has not been formally superseded by the Bush administration. While it is clear that President Bush has pursued a different strategy than the one followed by President Clinton, *A National Security Strategy for a New Century* is instructive in how it directed governmental agencies to pursue national security policy. According to the document, the primary objectives of American strategy are "enhancing American security; bolstering our economic prosperity; and promoting democracy and human rights abroad."[14] To this end, the strategy calls for the United States to selectively engage in the world to further its interests and achieve the stated objectives. In a broad overview of the strategy, the document states:

> "Our strategy is founded on continued U.S. engagement and leadership abroad. The United States must lead abroad if we are to be secure at home. We cannot lead abroad unless we devote the necessary resources to military, diplomatic, intelligence and other efforts. *We must be prepared and willing to use all appropriate instruments of national power to influence the actions of other states and non-state actors, to provide global leadership, and to remain a reliable security partner for the community of nations that share our interests*...By exerting our leadership abroad we have deterred aggression, fostered the resolution of conflicts, enhanced regional cooperation, strengthened democracies, stopped human rights abuses, opened foreign markets and tackled global problems such as preventing the spread of weapons of mass destruction, protected the environment, and combated international corruption"[15] (emphasis added).

Further, the strategy calls for a close integration of the instruments of power: "To effectively shape the international environment and respond to the full spectrum of potential threats, our diplomacy, military force, other foreign policy tools, and domestic preparedness efforts must be closely coordinated."[16]

In linking the military to diplomatic efforts, the strategy says:

> "The U.S. military plays a crucial role in shaping the international security environment in ways that protect and promote U.S. interests, but is not a

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[14] *A National Security Strategy for a New Century,* 3.
[15] Ibid.
[16] Ibid., 4.

> substitute for other forms of engagement, such as diplomatic, economic, scientific, technological, cultural and educational activities. Through overseas presence and peacetime engagement activities such as defense cooperation, security assistance, and training and exercises with allies and friends, *our Armed Forces help to deter aggression and coercion, build coalitions, promote regional stability and serve as role models for militaries in emerging democracies. With countries that are neither staunch friends nor known foes, military cooperation can serve as a positive means of building security relationships today that will contribute to improved relations tomorrow"*[17] (emphasis added).

As a whole these passages show that the national security strategy envisions military assets being used in a role to uniquely achieve diplomatic goals—a role, however, that must be subservient to civilian policymakers.

The next level of national policy regarding the use of space systems is the *National Space Policy*. Once again, this document was promulgated by the previous administration, yet it has not been superseded. According to the policy, "For over three decades, the United States has led the world in the exploration and use of outer space…We will maintain this leadership role by supporting a strong, stable and balanced national space program that serves our goals in national security, *foreign policy*, economic growth, environmental stewardship and scientific and technical excellence"[18] (emphasis added). Further, the document states that among the goals of the American space program are, "Strengthen and maintain the security of the United States…Promote international cooperation to further U.S., national security, and foreign policies."[19] Once again, in a manner similar to the national security strategy, the document indicates that space assets have a role to play in achieving foreign policy objectives.

According to the *National Space Policy*, among the goals of national security space activities are, "deterring, warning, and if necessary, defending against enemy attack…satisfying military and intelligence requirements during peace and crisis as well as through all levels of conflict…*supporting the activities of national policy makers, the intelligence community, the National Command Authorities, combatant commanders and the military services, other federal officials, and continuity of government operations*"[20] (emphasis added). In this case,

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[17] Ibid., 11.
[18] *National Space Policy Fact Sheet*, The White House's National Science and Technology Council, 19 September 1996, n.p., on-line, Internet, 26 April 2002, available from http://www.ostp.gov/NSTC/html/fs/fs-5.html.
[19] Ibid.
[20] Ibid.

the policy states that a specific objective of military space assets is to support the efforts of other government agencies (including, ostensibly, diplomatic efforts). Finally, the policy directs that, "The United States will pursue and conduct international cooperative space-related activities that achieve scientific, *foreign policy*, economic, or national security benefits for the nation"[21] (emphasis added).

Review of Presidential guidance on national strategy and space policy appears to indicate that space assets have a role to play in directly achieving diplomatic objectives—efforts that must be coordinated through the interagency process. As will be seen, the doctrine and policy statements of the Department of Defense (DoD) and subordinate organizations realize space assets can be used in this manner, yet fail to provide guidance on how to actually do it. This chapter will explore the military's doctrinal view of space assets with respect to their ability to shape events in the international arena. Beginning with DoD official policy regarding space forces, this study will review doctrinal and policy statements from the Joint Chiefs of Staff (JCS), United States Space Command (USSPACECOM), and the United States Air Force (USAF). Taken as a whole, it is evident that the governmental agencies (i.e. the military services and commands) best positioned to recommend how to use space assets to influence events around the world are not focused on using these assets in that manner—rather, they are almost exclusively focused on how best to use space assets to improve the effectiveness and efficiency of terrestrial forces.

DEPARTMENT OF DEFENSE

The overarching DoD statement on the use of space assets is DoD Directive 3100.10, *Space Policy* (9 July 99). In this directive, the Secretary of Defense lays out the department's view of space assets in broad terms. Of all the doctrinal statements to be reviewed, DoDD 3100.10 has the most to say about space assets as something more than just enablers of terrestrial forces. As its definition of space power reveals, DoDD 3100.10 points to the possible use of space assets to influence global events: "The total strength of a nation's capabilities to conduct and *influence activities* to, in, through, and from the space medium to achieve its objectives"[22] (emphasis added). While this directive hints at the possible diplomatic uses of space assets, it

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[21] Ibid.
[22] DoDD 3100.10, 23.

provides insufficient detail on how to actually use space assets in that role.

According to DoDD 3100.10, the "primary DoD goal for space and space-related activities is to provide operational space force capabilities to ensure that the United States has the space power to achieve its national security objectives."[23] In keeping with this direct linkage between the fulfillment of national security objectives and space power, the directive offers some insights into how space assets could be used to independently influence global events. For example, "Space forces are integral to the deterrent posture of the United States armed forces. They help to ensure that preparations for and initiation of hostile actions will be discovered in a timely manner…Space forces thus may introduce an element of uncertainty into the minds of potential adversaries about whether they can achieve their aims."[24] Further, the directive briefly mentions the intriguing possibility of using space forces to "enhance forward presence by providing the means to support commitments while minimizing risk to United States personnel."[25]

While the directive recognizes the possibility of space assets being used to raise doubt in an adversary's mind or to influence other states by forward presence, it does not make clear how space assets could be used to actually achieve those effects. In one section, the directive tries to describe the mechanism through which space assets could influence other states: "…the ability to perform space force application in the future could add a new dimension to United States military power. Space forces will thus enable the United States to compel an adversary to cease and desist from the pursuit of its aims through the use of necessary and proportional force."[26] Although this statement is visionary in predicting the possible implications of weaponizing space, it does not address how space assets can actually shape terrestrial events given today's technology and space force structure. In two areas, however, the directive does provide detail on how the United States can use its space assets to achieve diplomatic objectives.

The most detailed sections of DoDD 3100.10 that describe a mechanism by which space assets can independently be used to influence global events concern coalition operations and international cooperation. According to the directive, space assets "provide a national advantage to the United States and are an important element within coalition strategy where America can

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[23] Ibid., 6.
[24] Ibid., 2.
[25] Ibid., 4.

contribute unique capabilities for international security."[27] In this sense, the United States can influence international events through diplomacy by contributing unique space assets to efforts that call for coalition action (e.g., regional peacekeeping, etc…). In other cases, the United States may oppose the actions of an ad hoc coalition of nations and withhold space support for their activities. Regarding international cooperation, the directive says, "International cooperation and partnerships in space activities shall be pursued with the United States' allies and friends to the maximum extent feasible…Such cooperation shall forge closer security ties with U.S. allies and friends, enhance mutual and collective defense capabilities, and strengthen U.S. economic security. It shall also strengthen alliance structures, improve interoperability between U.S. and allied forces, and enable them to operate in a combined environment in a more efficient and effective manner."[28] Further, the directive describes how the sale of space assets to other countries can positively shape the international environment: "Foreign military sales of U.S. space hardware, software, and related technologies may be used to enhance security relationships with strategically important countries subject to overall U.S. Government policy guidelines."[29]

While DoDD 3100.10 tentatively explores how space assets can be used to confer diplomatic advantages to the United States, it also discusses the role of space assets as an enabler and force multiplier for terrestrial forces. It states, "The high technology force multipliers provided by space systems enhance the combat power of military forces."[30] In addition, the directive states that a key function of space assets is to "Enhanc[e] the operational effectiveness of U.S. and allied forces."[31] As will be seen in the following sections, this view of space assets as enablers and force multipliers is the dominant view adopted by the joint community and the Air Force.

JOINT CHIEFS OF STAFF

One of the most instructive aspects of joint space doctrine is the fact that no official space doctrine exists at the joint level. While space assets and space as a warfighting medium are

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[26] Ibid., 3.
[27] Ibid.
[28] Ibid., 14.
[29] Ibid., 16.
[30] Ibid., 2-3.
[31] Ibid., 7.

mentioned in a number of official joint doctrine publications, the joint community has been unable to approve its space doctrine document, Joint Publication (JP) 3-14, *Joint Doctrine for Space Operations*. Although versions of JP 3-14 have been circulated for many years (and a current draft version is once again in coordination for final approval), no official doctrine exists explicitly for the employment of space assets in the joint arena.

The draft version of JP 3-14, with one exception, views space assets as strictly enablers of terrestrial forces. While the focus on how space assets support the joint fight is understandable, the lack of detailed thought explaining how space assets can be used to directly secure diplomatic objectives is noticeable. In emphasizing the role of space assets as enablers of terrestrial forces, the conclusion to JP 3-14's (Draft) Executive Summary states, "The United States military continuously deploys space assets and space forces around the world, enhancing force projection and military operations."[32] Further, the first sentence of JP 3-14's (Draft) first page says, "The use of space capabilities has proven to be a **significant force multiplier** when integrated into joint operations. To ensure this integration, joint commanders and space operators must have a **common and clear understanding** of how space forces and space capabilities contribute to joint operations, and how military space operations should be used to support warfighters in achieving United States national security objectives"[33] (emphasis in the original). While JP 3-14 (Draft) primarily focuses on how to better integrate space assets into the joint fight, and hence better enable terrestrial forces, it does provide one interesting glimpse into possible uses of space assets to achieve diplomatic goals.

In its chapter on Space Planning, JP 3-14 (Draft) states that space assets can be used during pre-hostilities to shape the battlespace. In addition, it infers that space assets can provide unique leverage to the United States in achieving its diplomatic goals short of hostilities. As stated in the publication, "As tensions rise in pre-hostilities, the CINC will rely heavily on various ISR assets, including satellites, to monitor the enemy. Space forces also can be utilized as flexible deterrent options (FDOs). Conducting a theater ballistic missile defense (TBMD) exercise with United States allies is one possible FDO if the CINC is facing a TBM threat. Another FDO could be to publish, in the world media, high-resolution images from commercial satellites and other systems, to clearly demonstrate the enemy's preparations for war in order to

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[32] JP 3-14 (Draft), xii.

raise public awareness."[34] While "raising public awareness" does not initially sound like a strong mechanism to secure United States diplomatic objectives, examples such as the Cuban Missile Crisis show what can be accomplished when high-quality imagery of denied areas is used to expose aggressive or illegal behavior of another state in front of the world diplomatic community.[35]

Besides the example above of how space assets could be used to deter a hostile nation, the main body of JP 3-14 (Draft) is otherwise silent on how to use space assets in an other-than-enabler role. Interestingly, however, the publication does highlight many of the unique attributes of space assets that could be used for diplomatic advantage, but it couches these attributes in terms of enabling terrestrial forces. For example, the draft publication mentions that among space assets' unique capabilities are "that they are already deployed and can be in place (in theory) when crises arise,"[36] "line of site [sic]…access to large areas (including remote and denied access areas)"[37], and "global access."[38] In each case, however, JP 3-14 (Draft) then describes how these advantages can be exploited by terrestrial commanders, while neglecting how these attributes could be used to diplomatically achieve national objectives.

Finally, JP 3-14 (Draft) concludes with a series of appendices that provide some further hints at how American space assets could be leveraged to directly achieve diplomatic goals. In Appendix A, Shared Early Warning (SEW) of missile warning data with other countries is discussed. While it seems this tool could be used by a regional Commander-in-Chief (CINC) to shape the behavior of another country in exchange for access to SEW data, the publication says, "The objective of shared early warning (SEW) is the continuous exchange of missile early warning information derived from United States missile early warning sensors, and, when available, from the sensors of the SEW partner."[39] Although this objective is the immediate tactical goal of those assigned the mission of collecting and disseminating the SEW data, it is not the objective of the overall program. Rather, the overall objective is to enhance the security of

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[33] Ibid., I-1.
[34] Ibid., V-2.
[35] See Chapter 3 for a discussion of how the public release of U-2 imagery in the Cuban Missile Crisis contributed to the United States securing its diplomatic goals.
[36] JP 3-14 (Draft), I-2.
[37] Ibid., I-3.
[38] Ibid., I-4.
[39] Ibid., A-2.

the United States and its SEW partners while deterring possibly hostile nations in possession of ballistic missiles.

The second appendix of interest is Appendix B in which JP 3-14 (Draft) discusses national intelligence platforms and recognizes that "National intelligence surveillance and reconnaissance systems provide direct support to the NCA [National Command Authorities].[40] The information provided by these systems is used by senior government leaders to make strategic political or military decisions, and is also of great utility to the JFC."[41] Beyond this general statement, however, the Appendix does not direct CINCs how to use space assets to secure the best possible advantage for the United States besides using space assets to enable terrestrial forces.

UNITED STATES SPACE COMMAND

As the "senior military advocate for space operations within the DoD,"[42] USSPACECOM plays an important role in shaping the joint view of space assets. As noted above, the absence of approved joint space doctrine leaves USSPACECOM as the highest uniformed command with approved space policy. While USSPACECOM is organized to conduct military space operations on a day-to-day basis, it also has thought about the future role of space assets. Laid out in Long Range Plan: Implementing USSPACECOM Vision for 2020, USSPACECOM surveys the future of space and space assets and discusses their relationship to the future security environment. As will be seen, while the document rests on a foundation of viewing space assets primarily as enablers of terrestrial forces, it also investigates some areas that reveal the diplomatic uses of space assets.

According to the Long Range Plan's foreword, the document was developed based on six "bottom lines," the first of which is "enabler of military operations."[43] In describing this foundational concept, the Long Range Plan states, "From DESERT STORM to every exercise and use of force since, we've come to know that all military operations depend on space-based

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[40] The term NCA, which refers to the President of the United States and the Secretary of Defense, is no longer used by the Department of Defense.

[41] JP 3-14 (Draft), B-2.

[42] *USSPACECOM,* Long Range Plan*, 101.*

[43] Ibid*.,* Foreword.

capabilities."[44] As with the documents reviewed previously, USSPACECOM's view of space assets is thus rooted in its ability to support terrestrial forces. In addition to this view, however, the Long Range Plan also recognizes the growing importance of space in its relationship to United States national power. In describing another of its six "bottom lines" that it terms "vital national interest," the document says, "Space is critical to both military and economic instruments of power—the main sources of national strength."[45] While the doctrine does not go on to explicitly describe how space assets can be used to directly achieve diplomatic goals, its description of how space assets can be used to shape and protect an "emerging area of vital national interest" does have applicability. [46]

In laying out its vision for the future, USSPACECOM sees four operational concepts as overarching guides. Of the four, "global engagement" and "global partnerships" make oblique references to ways in which space assets can be used to achieve diplomatic goals.[47] For example, in describing its vision for global engagement, the document makes references to the ability of space assets to provide forward presence and situational awareness around the globe. Unfortunately, this topic is not explored in detail except to state, "Future space systems will give commanders greater situational awareness and more time to react by providing a forward presence to complement land, sea, and air systems in theater"[48]—not surprisingly, even the concept of space assets providing forward presence is explained in terms of how they support terrestrial forces.

The second operational concept of note is global partnerships. In one of the most interesting sections of the Long Range Plan, USSPACECOM develops a concept for "Sharing the burden among allied spacefaring nations for services of common interest."[49] While this section illuminates a number of ways in which the United States can use its space assets to gain diplomatic advantages and shape the behavior of foreign countries, the focus for why we should do this is squarely on the budget. According to the document, "Partnering is a way to decrease pressure on military infrastructure by adding to the DoD's resources, so we can reinvest savings

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[44] Ibid.
[45] Ibid.
[46] Ibid.
[47] Ibid., 10.
[48] Ibid., 50.
[49] Ibid., 99.

to get the needed capabilities by 2020."[50] To ensure the reader does not misunderstand the purpose for the proposed partnering with allied nations and commercial firms, the Long Range Plan emphasizes "[Partnering is] not a goal in itself, nor is it a naive attempt to provide peace and harmony by trading away our sophisticated technologies. Instead, it recognizes what the United States can gain by adding to our prowess in space and is a pragmatic attempt to bolster our war-fighting abilities and deterrence despite increasing worldwide competition"[51] (emphasis added).

While the motivation for pursuing global partnerships for USSPACECOM is budgetary, the command does recognize that using space assets and space technology intelligently can lead to many diplomatic benefits. For example, among the benefits of forging global space partnerships are strengthened alliances and additional confidence in coalition warfare.[52] In addition, the Long Range Plan speculates the United States could use access to its space assets and space technology to force compliance by other nations with international space law and practice (which, according to the document, we should lead in codifying over the next 20 years). The document foresees that "The United States and its allies will guarantee the safety of space and be able to deny the use of space to those who threaten that safety. Sharing arrangements involving surveillance, warning, launch, and other mission areas—as well as standardization and interoperability—should contribute much to deterring hostile action in space and enhancing confidence in coalition warfare."[53] Finally, the document summarizes its approach to global partnerships by stating, "A strategy of mutual dependence, which requires all spacefaring nations to contribute and cooperate for mutual benefit, should deter aggression and foster enduring relationships."[54]

The USSPACECOM roadmap for the future, as laid out in the Long Range Plan, is interesting in that it foresees the growing linkage of space power to national power. In addition, it recognizes that providing access to American space assets and space technology can be a unique leverage of that national power for obtaining diplomatic goals. Not surprisingly, however, the document is rooted in an understanding of space assets as enablers of terrestrial

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[50] Ibid.
[51] Ibid.
[52] Ibid.
[53] Ibid., 101.
[54] Ibid., 105.

forces. Fortunately, space assets are sufficiently versatile that they can be used to enable terrestrial forces while simultaneously being used to directly achieve diplomatic goals.

UNITED STATES AIR FORCE

As the service providing the overwhelming majority of space assets and expertise within DoD, to include managing 85 percent of DoD's space funding, the Air Force, as the DoD Executive Agent for space, plays a unique role in defining the direction and use of space operations.[55] While the Air Force is not tasked to employ space assets in pursuit of national security objectives, a responsibility given to USSPACECOM, it is responsible for organizing, training, and equipping space forces that can be employed by appropriate joint commands. As part of its function, the Air Force has developed doctrine for the employment of space assets. To gain an understanding for how the Air Force views space assets, this study will review two versions of the Air Force's space doctrine. The first, Air Force Doctrine Document (AFDD) 2-2, Space Operations, 23 August 1998, was the official doctrine in effect when this study began. The second version, AFDD 2-2, Space Operations, 27 November 2001, was recently approved by the Air Force (superseding the 23 August 1998 version). The contrast in how the two documents view space assets is instructive of the evolving Air Force view of space assets as enablers of terrestrial forces.

PREVIOUS AIR FORCE SPACE DOCTRINE

In the foreword to the 23 August 1998 version of AFDD 2-2, the major thrust of the document is laid out: "The United States is the world's foremost aerospace power, and our space forces are essential elements of that power. Space systems and capabilities enhance the precision, lethality, survivability, and agility of all operations – air, land, sea, and special operations."[56] *While the notion of space assets contributing directly as an element of the nation's aerospace power is recognized, the majority of the document focuses on the ability of space forces to enable terrestrial forces.*[57]

In explaining the relationship between space assets and terrestrial forces, AFDD 2-2 says, "Space and terrestrial-based forces complement each other. Used properly, space forces are a

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[55] Space Commission, 22.
[56] Air Force Doctrine Document 2-2, *Space Operations*, 23 August 1998, Foreword.
[57] In a recent announcement, the Chief of Staff of the United States Air Force announced that "air and space" is now the preferred term rather than "aerospace."

significant force multiplier for terrestrial-based forces. In addition to supporting terrestrial operations, many military functions previously performed by terrestrial forces may be accomplished by space forces. In some cases, space may be the focus of operations and may be supported by complementary terrestrial-based forces. As space and air forces are fully integrated into a total aerospace force, future space assets may not be only a force multiplier but may be the force of decision itself."[58] This statement is forward-looking in its appreciation that space assets of the future may evolve beyond the force enhancement (i.e. enabling) role, but it implies that current space assets are strictly enablers for terrestrial forces.

While generally viewing current space assets strictly in an enabling role, the superseded version of AFDD 2-2 began to develop the idea of space assets being used as forward presence forces with the ability to shape global events. According to the document, "*Space systems provide an instantaneous presence not available from terrestrial-based forces, permitting the United States to leverage information to influence, deter, or compel an adversary or affect a situation*" [59] (emphasis in original). Further, AFDD 2-2 states, "[Space forces] give our national leaders the presence and warfighting options needed for power projection."[60] Although this statement recognizes how space assets' global presence provides options for the nation, it ultimately frames their contribution in terms of "power projection"—since space assets are unable to project power in the traditional military sense, the focus remains on enabling terrestrial power projection forces.

The chapter of AFDD 2-2 that most fully developed the idea of space assets contributing directly to diplomatic goals is Chapter 5, Space Employment Concepts. In passages that directly speak to how space assets can influence world events outside of their ability to enable terrestrial forces, the document stated, "Space forces play a significant part in our ability to characterize threats and identify an adversary's strengths, weaknesses, and vulnerabilities for our national leaders to use in diplomatic, political, and economic efforts. Data and information derived from space forces are often critical decision-making elements that can provide global situational awareness and diplomatic advantage and can permit the United States to respond effectively to

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[58] AFDD 2-2, 23 August 1998, 2-3.
[59] Ibid., 15.
[60] Ibid., 21.

evolving crises."[61] Further, in describing how space assets contribute during military operations other than war (MOOTW), AFDD 2-2 stated:

> "As crises escalate, space systems provide data and objective information that can help our leaders accurately appraise the situation and implement appropriate diplomatic, economic, and military measures to defuse or respond to the crisis. *Our use of military forces and capabilities as national power elements permits us to take effective actions prior to war that reflect our resolve to support friends, allies, and national objectives and interest*s. During MOOTW, space forces are employed to shift the balance of power in a regional crisis to deter war, resolve conflict, or promote peace. Timely intelligence data could be provided to one or both sides in a potential conflict area to reduce tensions. If these efforts fail, *space forces directly support the deployment, employment, and redeployment of military forces and the conduct of combat operations*"[62] (emphasis in original).

While recognizing that space assets can be used as "national power elements" to directly influence world events, the doctrine only briefly mentions how to use space assets in this role, and it fails to describe who should plan for and advocate such uses of space assets. The silence on these issues leads to the conclusion that an organization other than the Air Force is responsible for taking these actions, but that Air Force personnel should be aware that space assets could be used directly to support diplomatic efforts. Finally, in a remarkable statement of the importance the United States should place on using space assets to directly achieve diplomatic goals short of combat, the document says the focus on enabling terrestrial forces will occur when efforts at direct contribution have failed.

In general, the older version of AFDD 2-2 viewed space assets primarily as an enabler of terrestrial forces. It did recognize, however, the potential direct uses of space assets in achieving diplomatic goals. Although it did not provide many details on exactly how space assets should be used to directly support diplomatic goals, nor did it describe who is responsible for taking these actions, it did indicate that these efforts should be tried before relying on space assets as strictly enablers of other forces. However, the latest version AFDD 2-2 is not focused on filling in the gaps described above. Rather, the new version of AFDD 2-2 moves away from viewing space assets as anything other than enablers for terrestrial forces. Under the rubric of "air and space integration," the new doctrine tightly links space assets to terrestrial forces and improves integration at all levels.

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[61] Ibid., 21-22.

CURRENT AIR FORCE SPACE DOCTRINE

In describing its approach to space doctrine, the 27 November 2001 version of AFDD 2-2 lays out foundational doctrine statements that are "the basic principles and beliefs upon which" the doctrine is built.[63] Among these foundational principles, the document describes its view of space assets as enablers for terrestrial forces: "Space assets are force multipliers across the spectrum of conflict and must be integrated into deliberate and crisis action planning, as well as operations planning, combat operations, and time sensitive targeting (TST) to ensure timeliness of effects."[64] While an additional foundational principle states, "Space forces bring enhanced global presence, perspective, precision, and flexibility to the Air Force and military operations," the document does not list a foundational principle regarding the ability of space assets to directly influence global events[65]—even though higher policy and doctrine previously discussed alludes to this power. It does, however, provide further insight into the ability of space assets to provide global presence, but it does so in terms of enabling terrestrial forces.

On the first page of the first chapter, AFDD 2-2 discusses the importance of global presence provided by space assets: "Effective use of space-based resources provides a continual and global presence over key areas of the world. Just as airpower brought the ability to range vast distances in minimal time, satellites permanently 'forward-deployed' add another dimension to our force's ability to quickly position themselves for employment. *This global presence enables force-multiplying effects* from instant global communications to persistent, rapid intelligence, surveillance, and reconnaissance (ISR)" [66] (emphasis added). As with the entire document, this passage ties the ability of space assets to provide near-continuous coverage of the globe with their ability to enable terrestrial forces.

Interestingly, AFDD 2-2 does fill in some of the holes in the previous version of the document by stating who has planning responsibility for achieving global effects with space assets. According to the new doctrine, "Air Force space planning in support of the regional or functional supported JFC's requirements occurs through the SPACEAF operations center [the Air Force component of USSPACECOM]. The AFSOP [Air Force Space Operations Plan] details

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[62] Ibid., 22.
[63] Air Force Doctrine Document 2-2*, Space Operations*, 27 November 2001, viii.
[64] Ibid.
[65] Ibid.

how Air Force space operations will support both USCINCSPACE's global missions and theater requirements. There are two types of AFSOPs: 1) The global, which prioritizes effects across all AORs and functions based on geographic/functional CINCs' requests and USCINCSPACE priorities, and 2) the regional, which outlines effects for specific AORs."[67] Using this construct, then, requests for using Air Force space assets to directly achieve diplomatic goals would come from USSPACECOM and other CINCs. While this construct is useful for Air Force space assets, AFDD 2-2 does not, as an Air Force document, address the use of other American space systems not controlled by the Air Force.

The last portion of AFDD 2-2 applicable to whether space assets are viewed as having the ability to directly achieve diplomatic goals is in the definition of "space power" provided by the document. In summarizing definitions provided in other documents, each of the three listed definitions indicates that space assets constitute a unique capability able to be used to directly support national objectives: "a. The capability to exploit space forces to support national security strategy and achieve national security objectives (AFDD 1). b. The capability to exploit civil, commercial, intelligence, and national security space systems and associated infrastructure to support national security strategy and national objectives from peacetime through combat operations (AFDD 1-2). c. The total strength of a nation's capabilities to conduct and influence activities, to, in, through, and from space to achieve its objectives."[68] Although AFDD 2-2 itself does not develop the idea of space assets directly supporting diplomatic goals, it is interesting to note that the definition it uses for space power opens the possible uses of space assets far beyond being strictly enablers for terrestrial forces.

CONCLUSION

The United States military has transformed its view of space assets since the Persian Gulf War in 1991. In essence, space assets came out of the closet following this conflict and were embraced as a key enabler of military forces. Since that time, the process of integrating space forces into the overall military force has increased. To this end, military policy and doctrine documents have also increasingly focused on better integrating space operations and capabilities with those of terrestrial forces. While this evolution has greatly increased the effectiveness of

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[66] Ibid., 1.
[67] Ibid., 30-31.

the entire military force, a similar evolution in thought regarding the strategic uses of space assets to directly achieve diplomatic objectives has not occurred. In the next chapter, this study will review case studies of how space assets and other military forces have been used for diplomatic purposes. By doing so, the groundwork will be laid for building a taxonomy of space assets' diplomatic power.

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[68] Ibid., 54.

Chapter 3

Historical Examples: Case Studies in Diplomatic Leverage

One can predict with confidence that failure to master space means being second best in the crucial arena of our Cold War world. In the eyes of the world, first in space means first, period; second in space is second in everything.

--Lyndon B. Johnson

Only by the grace of God and an aerial photo is it possible to make these remarks to many of you in person rather than to your spirits. For this I am truly thankful.

--Commandant of the Marine Corps General David M. Shoup, 1963

Naval forces project U.S. influence and power abroad in ways that promote regional economic and political stability, which in turn serves as a foundation for prosperity.

--Department of the Navy's 1998 Posture Statement

Although the United States military views its current space assets mainly as enablers of terrestrial forces, there are several precedents for exploiting the diplomatic power of space assets and other military forces to achieve diplomatic leverage. In one of the most powerful examples, directly related to the perception of space power, the 1957 launch of Sputnik changed more than just the diplomatic relations between the world's two superpowers: "Not only did Sputnik shift the balance of power between the United States and the Soviet Union, it forever altered America's cultural and political landscape."[69] In 1962, the American release of overhead imagery from a U-2 reconnaissance aircraft at the United Nations during the Cuban missile crisis exposed Soviet actions and tipped the diplomatic standoff in favor of the United States. The best example of a systematic national approach to securing diplomatic advantage from military assets may be the United States' use of naval aircraft carriers in a forward presence role. This type of action has been a staple of modern American statecraft and has influenced events around the globe. In each of these cases, interestingly, diplomatic leverage was achieved by using assets in non- or pre-combat roles. In seeking to find ways in which current space assets can by used directly in pursuit of diplomatic objectives, reviewing the three examples mentioned above will help to uncover how diplomatic leverage has been achieved in the past and how space forces can contribute to this pursuit in the future.

Notes

[69] Paul Dickson, *Sputnik: The Shock of the Century* (New York: Walker Publishing Company, 2001), 247.

SPUTNIK

On 4 October 1957, from a secret missile base in the Soviet republic of Kazakhstan, the Soviet Union launched the first manmade earth orbiting satellite—Sputnik. Although the Soviets had repeatedly announced their imminent intention to launch a satellite, the actual event, in the words of Walter McDougall, "was the shot truly heard round the world."[70] Besides being the historical demarcation line between the terrestrial age of man (all history prior to October 1957) and the space age, Sputnik had a more immediate impact on the events of the day. While the American and Soviet alliance during World War II had quickly broken down following the war (as evidenced by the 1949 Berlin crisis and the Korean War), Sputnik was the event that brought on the *total* Cold War and ended the post-World War II perception of American superiority: "Sputnik was remaking the world into a *total* competition where prestige was as important as power."[71] In addition, in a development unanticipated by the Soviets, the launch also set a legal precedent for orbital overflight of sovereign nations.

History of Sputnik

The roots of the space race (a race that President Dwight Eisenhower was refusing to run prior to the fall of 1957) date back to the final years of World War II. In September 1944, Adolf Hitler began firing V-2 ballistic rockets from the west coast of Europe into London. As a forerunner of the modern intercontinental ballistic missile (ICBM), Hitler had high hopes that the V-2, along with other V weapons, would turn the tide of the advancing Allied armies.[72] Soon, however, it became apparent to even Hitler that the V-2 was a terror weapon at best and would be unable to do significant damage aside from possibly spreading panic in the British citizenry. Despite this lack of significant military utility, Hitler fired more than 4,300 V-2 weapons and caused the Allies to divert substantial air and ground resources in an effort to destroy the V-2 launch bases.[73] To say the least, both the United States and Soviet Union took notice of this awesome new technology and, as they invaded Germany from both the west and the east, tried to

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[70] Walter A. McDougall, *...The Heavens and the Earth: A Political History of the Space Age* (Baltimore: The Johns Hopkins University Press, 1985), 20.
[71] Ibid., 200.
[72] Dickson, 53.
[73] Captain John Shaw, "The Influence of Space Power upon History (1944-1998)," *Aerospace Power Chronicles—Contributor's Corner*, 16 March 1999, n.p., on-line, Internet, 13 February 2002, available from http://www.airpower.maxwell.af.mil/airchronicles/cc/shaw.html.

find the men, materials, and equipment used to produce the V-2: "Having seen the destructive power of the V-2 and knowing that America did not have its counterpart—or anything resembling it—on its drawing boards, the Army planned to get hold of as many V-2s as it could, along with its top engineers. The United States correctly assumed that the Russians had much the same idea: the scramble for the human and hardware spoils of the V-2 would become one of the first contests of the Cold War."[74]

In February 1945, Werner von Braun, the German rocket scientist who created the V-2 and oversaw its production, began contemplating what would happen to him and his team following the inevitable defeat of Germany. Taking a poll of his fellow engineers to see which of the Allies they would surrender to, von Braun decided to begin a secret operation to move as many of his men and as much of his equipment as he could westward toward the American lines. Finding an American infantryman, von Braun and his team turned themselves over to the Americans with the complete plans for the V-2, enough equipment to assemble many rockets, and the majority of the German brain trust responsible for the V-2's creation. At the same time, the Soviets were scrambling to secure as much V-2 material as they could find as well. While the majority of the equipment went to the Americans, the Soviets were able to acquire some equipment (particularly production equipment) and coerce many German rocket engineers to work for them.[75]

From the beginning of the Soviet state, technology had played a unique role in the hopes of the Marxist-Leninist utopia they were struggling to create.[76] Building upon their communist ideology, early Soviet leaders encouraged investigations into rocketry and space flight. While the leading Soviet rocket scientist of the period, Sergei Korolev, was arrested in the Stalin purges of 1938, he somehow survived the worst of the gulag system and was later rehabilitated as the head of Soviet rocket design. Using his own experience and years of research, Korolev, mysteriously referred to only as the "Chief Designer" in the Sputnik period, incorporated the captured Germans and their equipment into his efforts.[77] Although the primary focus of Soviet rocket design was to produce an ICBM (which was successfully tested on 15 May 1957), the Soviet premier, Nikita Khrushchev, sensed that being the first to launch a satellite into orbit

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[74] Dickson, 56.
[75] Ibid., 58.
[76] McDougall, 29.

would be a propaganda coup for the Soviets: "…one must give credit to Khrushchev. He realized that space victories could be of greater importance in politics than the threat of a club with a nuclear bomb on its end."[78] While the Soviets rushed to ready the Sputnik satellite and the Vostok booster they worried the Americans (universally acknowledged as the world's leading technological power) would beat them. Little did they know that President Eisenhower had firmly resisted the pressure to enter a space race.

Sputnik and Prestige

On the evening of 4 October 1957, Korolev's efforts came to fruition with the successful launch of Sputnik. Notified while on vacation in the Black Sea, Khrushchev was ecstatic. The Soviets then pronounced the launch to the world through a simple radio announcement.[79] While Sputnik broadcast its faint warbling tone to all equipped to hear the radio signal, the effect of the launch was beginning to reverberate around the globe. Although Khrushchev had hoped the launch would increase the reputation of Soviet technological and scientific accomplishments, even he would be surprised by the world's reaction to Sputnik—his surprise would not prevent him, however, from taking full advantage of this opportunity: "…Sputnik ensured a hubris among the citizens of the Soviet Union not seen to the same degree since the end of World War II in 1945 or to be experienced again in that empire's history. It represented a high-water mark of success and Nikita Khrushchev's leadership exploited it to the fullest for the next decade. Thereafter, with high priorities given the effort by the Soviet leadership, the communist state's rocketeers led the way in one stunning success after another."[80] As Khrushchev later stated, "…we tried to derive the maximum political advantage from the fact that we were first to launch our rockets into space. We wanted to exert pressure on the Americans."[81] Other Soviet leaders would learn this lesson as well, for, in the words of Jim Oberg,

> "Within a short time of the Sputnik launch (October 4, 1957), Soviet leaders quickly realized the most important result of their space activities. These 'space spectaculars' convinced the West (and the Soviet public themselves) that the

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[77] Dickson, 67.
[78] Boris Chertok, *Cold War: Sputnik*, Episode 8, Warner Home Video, 60 min., 1998, videocassette. Transcript available on-line, Internet, from http://www.cnn.com/specials/cold.war/episodes/08/script.html, n.p., 14 February 2002.
[79] Dickson, 9.
[80] Roger D. Launius, John M. Logsdon, and Robert W. Smith, eds., *Reconsidering Sputnik: Forty Years Since the Soviet Satellite* (Amsterdam: Harwood Academic Publishers, 2000), xi.
[81] McDougall, 249.

> Soviet Union possessed highly advanced space and missile capabilities. This high level of perceived status—scientific, technological, and military—proved to be the main (some would say only) benefit of Soviet space activities. It would be simplistic to say that the program was only funded primarily for prestige; rather, the program proved its worth when Western attitudes shaped by the public perception of the program could be exploited diplomatically and commercially."[82]

Initial public reaction in Western nations was extreme: "The news of the launch in the world's leading newspapers got Second Coming treatment."[83] As Walter McDougall would later state, "Public outcry over Sputnik had more repercussions than any event since Pearl Harbor."[84] While some scientists applauded the news as a great scientific achievement, it soon became apparent that the world was reconsidering its view of the Soviets. Instead of viewing them as technologically backwards, many began to question how the United States had allowed itself to be surpassed by the Soviets. Although this reaction was the intended hope of Khrushchev and Korolev, they could not have anticipated that world reaction would go beyond strictly the technological arena to include a general enhancement in Soviet prestige: "The space and arms races that began with the launch of Sputnik were destined to determine a global economic champion and establish the model of development for the world's emerging nation-states. This paradigm battle was clearly evident, and it acted as a catalyst to change…fundamental perceptions about the world. [I]t now appeared to prove the Soviet contention that the command-economy model of the Soviet Union was superior to the United States free-market model technologically. Economic superiority was touted as proof enough that the Soviets were also ahead socially and politically."[85]

In fact, many parts of the world, particularly the Third World and unaligned states, started to view Soviet society itself as the transcendent system in the world. Even close American allies like Britain and France were forced to view the Soviets in a new light based on Sputnik (Britain in particular used reaction to Sputnik to further its own agenda).[86] In fact,

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[82] James E. Oberg, *Space Power Theory* (Washington, D.C.: Government Printing Office, 1999), 51.
[83] Launius, Logsdon, and Smith, 84.
[84] McDougall, 142.
[85] Everett C. Dolman, *Astropolitik: Classical Geopolitics in the Space Age* (London: Frank Cass, 2002), 93.
[86] Launius, Logsdon, and Smith, 290-291. According to John Krige, "[Sputnik] was seen as being to Britain's advantage, as showing the Americans that they were not invulnerable and that they needed their allies, so breathing new life into the faltering Anglo-American 'special relationship' in the nuclear field just when the U.K. was developing new technologies for its independent deterrent." Soon after the launch of Sputnik, the United States Congress amended the 1946 McMahon Act that had forbid sharing of American nuclear information with foreigners.

"Sputnik hurt United States prestige [around the world] more than any sum of foreign aid could make good."[87]

Similarly, reaction in the United States was filled with surprise, self-doubt, and political recriminations.

> "As the Director of Central Intelligence [Allen Dulles] warned, Sputnik was exerting a 'very wide and deep impact' in Western Europe, Africa, and Asia. Under Secretary of State Christian Herter echoed Allen Dulles's assessment. He reported to the NSC that even the best allies 'require assurance that we have not been surpassed scientifically and militarily by the Soviet Union.' The situation appeared even more disastrous outside the Western alliance. Herter cautioned, because the Soviet feat seemed to affirm the wisdom of neutrality. The neutral countries, he noted, 'are chiefly engaged in patting themselves on the back and insisting that the Soviet feat proves the value and wisdom of the neutralism which these countries have adopted.' To the NSC, then, Sputnik 1 confirmed predictions that Soviet technological spectaculars could deal a severe blow to U.S. prestige and credibility."[88]

In a report on the impact of Sputnik, published 7 July 1959, the United States Information Agency determined: "Soviet successes in space have produced a major revision in the image of the Soviet Union and to some degree of the Soviet system, and lent greatly enhanced credibility to Soviet propaganda claims. The Soviet Union, by appearing to have spectacularly overtaken the United States in a field in which the United States was very generally assumed to be first by a wide margin, is now able to present itself as fully comparable to the United States and able to challenge it in any field it chooses—perhaps the most striking aspect of the propaganda impact of space developments."[89]

In keeping with his conservative nature, President Eisenhower was not initially concerned by news of Sputnik. Continuing to insist the United States had never engaged in a space race with the Soviets, Eisenhower tried to assure the nation that the United States' satellite program was on track and that there was no need for concern. More importantly, he and his administration denied what had been predicted in many studies, and what was obvious on the world stage—namely, that the Soviet Union was reaping the rewards in prestige of being the first

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[87] McDougall, 147.
[88] Launius, Logsdon, and Smith, 220.
[89] United States Information Agency, *Impact of United States and Soviet Space Programs on World Opinion* (Washington, D.C.: Office of Research Analysis, 7 July 1959), n.p., on-line, Internet, 15 February 2002, available from http://www.hq.nasa.gov/office/pao/History/sputnik/july59.html.

into space.

The implications for allowing the Soviets to reach space first had been discussed for years within government circles. For example, a 1946 RAND report stated the first launch "would produce repercussions in the world comparable to the explosion of the atomic bomb."[90] Further, another RAND report, this one published in 1950, found that artificial satellites held not only great military potential, but also had serious "politico-psychological implications."[91] The press, however, fueled in part by Democrats seeking advantage over the Republican president, warned about the rising red moon symbolized by the newly orbited satellite.[92] Senator Henry M. Jackson, Democrat of Washington, called Sputnik "a devastating blow to the prestige of the United States as the leader in the scientific and technical world" and demanded a "National Week of Shame and Danger."[93] Based largely on this national outcry, Eisenhower finally entered the space race, albeit quietly, when he authorized von Braun and his Army team at Huntsville's Redstone Arsenal to quickly prepare for a launch (the first successful American launch finally occurred on 31 January 1958) while preparations for the upcoming Vanguard liftoff were still on-going (Vanguard failed, in another terrific blow to United States prestige, on 6 December 1957).[94]

Why Eisenhower waited so long to authorize von Braun to proceed with his efforts to launch a satellite has been debated over the years. The initial interpretation for why Eisenhower decided in 1955 to prioritize the Vanguard project over von Braun's effort was that Eisenhower preferred the Navy's Vanguard since it was more of a civilian project than von Braun's team. While the Naval Research Lab was responsible for the project, civilians led it with science as its primary aim. As stated by a Vanguard leader, "[Vanguard] should be thought of as an IGY [International Geophysical Year] project in which the DoD is cooperating, rather than as a DoD project."[95] By going with the civilian dominated team, Eisenhower was staying in the spirit of the (GY)—a global cooperative scientific effort from July 1957 to December 1958. By giving priority to the Vanguard team, Eisenhower was supposedly indicating to the world, and to the

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[90] McDougall, 102.
[91] Ibid., 108.
[92] Ibid., 148.
[93] Dickson, 118.
[94] Ibid., 172.
[95] McDougall, 130.

American military-industrial complex, that in his vision space was not to be militarized—it would be preserved for scientific exploration. In this interpretation, Eisenhower was disaffected by the launch of Sputnik because he viewed it as a scientific achievement without broader diplomatic implications.

Sputnik and Legal Precedent

A more recent interpretation of Eisenhower's 1955 decision has to do with his desire to secure freedom of navigation for future United States reconnaissance satellites. Knowing the Soviets jealously guarded their territorial airspace in accordance with international law, and knowing the Soviet desire to maintain themselves as a closed society to the West, Eisenhower anticipated significant diplomatic and legal problems if the United States launched the first satellite and the Soviets objected when it orbited their territory. From the perspective of the mid-1950s, the anticipation that legal recognition of territorial sovereignty would be extended from the air into space was valid. In this light, Eisenhower thought that putting a military satellite into orbit would definitely provoke the Soviets into objecting. He hoped, however, that the civilian influenced Vanguard would quiet Soviet objections: "The United States could not be sure of the Soviet reaction to their use of a satellite overflying their sovereign territory, but in the guise of an IGY event, as its purpose, there was hope the appropriate precedents could be established."[96] While some revisionist theories go so far as to claim that Eisenhower intentionally allowed the Soviets to launch into space first to allow them to set the precedent for freedom of navigation in space, it appears he never overtly tried to slow the progress of Vanguard. Instead of having to rely on the Soviets to accept Vanguard, however, the timetable of American and Soviet preparations dictated that Sputnik was launched first.

Whichever interpretation is factual concerning why Eisenhower switched from the most promising satellite program in 1955 to one that appeared farther from a successful launch, a decision John Logsdon called "one of the more profound misjudgments in his career,"[97] there is no doubt that the United States government diplomatically exploited Sputnik in regard to legal precedent. By failing to protest as Sputnik orbited above the United States, Eisenhower established a precedent for freedom of space: "Initially, United States policymakers were

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[96] Dolman, 108.
[97] Launius, Logsdon, and Smith, 262.

stunned, but their dismay soon turned to elation when they realized that the Soviet union had unwittingly solved the overflight dilemma for them."[98] As this principle would later be enshrined in international law, Sputnik established a pattern for how the space age would proceed. While Khrushchev more than realized his primary goal in launching Sputnik, namely increasing Soviet prestige, he did not anticipate that the legal precedent established by Sputnik would have great diplomatic ramifications.

Sputnik: Conclusion

From today's vantage point, it is easy to look back on the early space age's cold warriors with a gentle paternalism that finds preoccupation with preeminence in space, and the concomitant prestige they believe it afforded, as naïve. In the context of their day, however, the issue was serious enough to engage the hearts and minds of each side's best intellects (political, military, and scientific), as well as captivate the Third World states over which the cold warriors sought influence. As aptly described by NASA chief historian Roger D. Launis, "To a remarkable degree, the Soviet announcement changed the course of the Cold War…Two generations after the event, words do not easily convey the American reaction to the Soviet Satellite."[99] While no actual shots were fired in space during these years, the war for prestige had surely reached low-earth orbit. Perhaps more importantly, the Soviet's rush to launch Sputnik allowed the United States to dictate the terms of free passage through space and established a legal precedent that the United States would use to great advantage from that point on.

THE CUBAN MISSILE CRISIS AND IMAGERY

The rebalancing of global power following Sputnik and the early space age changed the context of international relations. With the Soviet Union enjoying significant prestige due to space successes, Khrushchev attempted to exploit this newfound power to achieve Soviet diplomatic goals. One means by which the Soviets attempted to influence world events was to create the perception of massive military superiority that could be used to coerce other states into accepting, or acquiescing to, Soviet advances. Although the Soviets tried to foster the notion in the mid-1950s that they had more long-range bombers than the United States (commonly

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[98] Dolman, 108.
[99] Dickson, 6.

referred to as the bomber gap), their credibility was greatly increased following Sputnik as they tried to convince the world of their superiority in ICBMs (the missile gap). Proving the dictum that perception is reality, the fact the American government had internally disproved the bomber gap and missile gap did not prevent Soviet leaders from attempting to exploit the worldwide opinion that believed in Soviet superiority. One of the flash points where this Soviet tactic would play out was during the Cuban Missile Crisis of October 1962.

The Need for Objective Data

Upon entering office in early 1953, President Eisenhower was concerned with the United States' ability to acquire strategic intelligence on the closed Soviet bloc:

> "On August 29, 1949, the Soviets detonated a nuclear device at Semipalatinsk, in Central Asia. It came as a surprise to the fledgling U.S. intelligence community, which generally believed that the Soviet Union was some five years behind the U.S. in nuclear development. The intelligence community had little knowledge of the details of that event, or where and how the weapon had been produced. Subsequent attempts to procure strategic intelligence on the Soviet Union resulted in repeated failures. Vast areas of the Soviet Union had been curtained off from the outside world, and Soviet military preparations, production, and deployment activities were carried out in the utmost secrecy. All of their strategic capabilities—bomber forces, ballistic missiles, submarine forces, and nuclear weapons plants—were concealed from outside observation. The Soviet air defense system, a prime consideration in determining U. S. retaliatory policies, was also largely an unknown factor."[100]

While human intelligence provided some data during the immediate post-World War II period, it was spotty and not time sensitive. Likewise, signals intelligence, one of the Allies most important advantages during World War II, was limited in its scope to largely the periphery of the Soviet Empire and also was not time sensitive due to the time required to decrypt and then decode intercepted message traffic. Knowing the United States was largely in the dark concerning actual Soviet strategic capabilities and intentions, Eisenhower initiated several programs to enhance American intelligence gathering resources. Not surprisingly, due to his wartime service in which, according to the United States Strategic Bombing Survey, 80 percent of useful intelligence came from aerial photography, Eisenhower placed a premium on photography as a means of providing objective information on the Soviet Union.[101] Among the

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[100] Dino A. Brugioni, *Eyeball to Eyeball* (New York: Random House, 1990), 3.
[101] Don Moser, "The Time of the Angel: The U-2, Cuba, and the CIA," *American Heritage*, October 1977, 6-7.

intelligence programs initiated during his administration were the U-2, the SR-71, and reconnaissance satellites.[102]

During the mid-1950s, based on human intelligence, Soviet misinformation, and overly pessimistic intelligence estimates by the Air Force, the perception arose of a bomber gap in which the Soviet Union had more long-range, nuclear capable bombers than the United States. To determine the truth of this assertion, and provide a regular means for gathering objective data on the Soviet Union, Eisenhower pushed the Central Intelligence Agency (CIA) to adopt a revolutionary long-range reconnaissance aircraft that the Air Force had recently turned down. Readily accepting this project, the CIA, working with the Air Force and Lockheed's Skunk Works, produced and tested a prototype of the U-2 within 8 months.[103] Development was so fast, in fact, that the first U-2 flight over Soviet airspace occurred on 4 July 1956. In a startling revelation to the defense establishment, the U-2 for the first time provided conclusive evidence that the bomber gap was a myth.[104] While Soviet radar capabilities were better than expected and able to track the U-2 at its operating altitude of 70,000 feet, thus allowing the Soviets to protest the invasion of their airspace, they were impotent to stop the U-2—a situation the Americans took full advantage of for almost 4 years (until the 1 May 1960, shoot down of Gary Powers' U-2 over the Soviet Union ended systematic flights over that country).[105] As stated by President Eisenhower,

> "During the four years of its operations, the U-2 program produced intelligence of critical importance to the United States. Perhaps as important as the positive information—what the Soviets did have—was the negative information it produced—what the Soviets did not have. Intelligence gained from this source provided proof that the horrors of the alleged 'bomber gap' and later the 'missile gap' were nothing more than imaginative creations of irresponsibility. U-2 information deprived Khrushchev of the most powerful weapon of Communist conspiracy—international blackmail—usable only as long as the Soviets could exploit the ignorance and resulting fears of the free world."[106]

Following Eisenhower's debunking of the bomber gap, he used the U-2 to begin searching for Soviet missiles. Although world opinion following Sputnik was that the Soviets

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[102] Brugioni, 47.
[103] Moser, 8.
[104] Brugioni, 30.
[105] Ibid., 43.
[106] Ibid., 51.

had a clear advantage in missile technology and ICBMs, U-2 imagery was unable to confirm this supposed lead. Once again providing objective information for the administration, the U-2 had shown that the missile gap was also a myth. While this assessment gave the administration the information it needed to resist significant increases in defense spending to counter the so-called missile gap, Eisenhower would not allow the U-2 imagery to be publicly released for fear of compromising the U-2's technical capabilities. Sensing the growing political pressure mounting over the missile gap, the administration decided to release the proof to a friendly reporter, Charles Murphy of *Fortune*, an Air Force Reserve colonel. Allowing him access to U-2 imagery showing the missile gap to be false, Murphy's article laid out the case against the gap. When the article went to the State Department for a final check, however, it was withheld from publication because Secretary Dulles believed it revealed too many intelligence sources and methods.[107] This unwillingness to publicly disprove the missile gap allowed it to become a political issue that was capitalized upon by Senator John Kennedy in his 1960 election against Vice President Richard Nixon.[108]

Coming to power in 1961, the Kennedy administration quickly found out the missile gap did not exist. While they publicly announced this only a few weeks after coming into office, they also declined to release imagery proving the point. Once again, the popular perception of Soviet missile superiority was allowed to fester unchecked by objective information.

Cuba an U-2 Imagery

By the summer of 1962, Cuba remained an enormous embarrassment for the United States. Having already suffered the failed Bay of Pigs Invasion, the Kennedy administration was eager to solve the Cuba problem. When reports began arriving in Washington in 1962 that the Soviet Union was starting to send weapons to Cuba, Kennedy and his advisors decided on a measured response stating that the United States would not react strongly to defensive weapons, but would not tolerate any offensive Soviet weapons on the island. During the late summer of 1962, a series of diplomatic exchanges, both public and private, passed between the United States and Soviet Union. From the American perspective, their messages clearly indicated that they would have to take serious action if offensive weapons were introduced into Cuba. The

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[107] Ibid., 40.
[108] Launius, Logsdon, and Smith, 396.

Soviets, on the other hand, repeatedly claimed they were not sending offensive weapons to Cuba, while privately assuring Kennedy that they would take no action that would jeopardize the administration prior to the upcoming November elections.[109] On 11September 1962, for example, the Soviet news agency TASS stated the Soviet policy: "…there is no need for the Soviet Union to shift its weapons for the repulsion of aggression, for a retaliatory blow, to any other country, for instance Cuba. Our nuclear weapons are so powerful in their explosive force and the Soviet Union has such powerful rockets to carry these nuclear warheads, that there is no need to search for sites for them beyond the boundaries of the Soviet Union."[110] Kennedy accepted these assurances and stated publicly that only defensive weapons were flowing to Cuba.

On 12 September, intelligence indicators started to point to the fact that the Soviets had gone beyond merely providing Cuba with defensive weapons—they were starting to deploy offensive nuclear-tipped missiles.[111] Not satisfied with merely the sketchy reports of American agents on the island, along with refugee reports from those who had recently left Cuba, the administration began regular U-2 flights over the island. On 15 October, photo analysts, reviewing U-2 imagery from a 14 October flight, for the first time confirmed the presence of Soviet medium range ballistic missiles (MRBMs) in Cuba (analysts would later also confirm the existence of intermediate range ballistic missiles (IRBMs) in Cuba).[112] Relaying the U-2 imagery to President Kennedy on 16 October, the Cuban Missile Crisis had begun: "Without the U-2, there may have been no crisis—only an accomplished fact."[113]

To handle the day-to-day coordination of the American response to the crisis, Kennedy constituted the now famous group that came to be known as the Executive Committee (ExCom). Relying on aerial photography (mainly provided by the U-2) as their primary source of intelligence, ExCom had the objective information necessary to justify the actions they were contemplating: "The U.S. government could hardly crank up a massive effort to blockade Cuba, rally the Latin American governments, and enlist the support of the American people and the NATO Allies on the basis of what a frightened agent thought he saw as he peeked out behind a

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[109] Brugioni, 115.
[110] Graham T. Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (New York: HarperCollins Publishers, 1971), 40.
[111] Ibid., 122.
[112] Ibid., 120, and Brugioni, 276-277.
[113] Brugioni, viii.

curtain in the middle of the night, the rantings of a drunken pilot, even though he was Castro's pilot, or two vague reports of long-trailer convoys. By far the swiftest and most accurate intelligence came from the U-2 photography."[114] ExCom developed five potential hypotheses for why the Soviets had taken this highly provocative step:[115]

1. Bargaining Barter—The missiles were meant to be a bargaining chip to get American missiles out of Turkey, or to be used in some other confrontation with the United States.
2. Diverting Trap—The missiles were intended to provoke a strong American response in Cuba that would split NATO and give the Soviet Union a pretext for moving against Berlin.
3. Cuban Defense—The missiles were to serve as a deterrent against future American action against Cuba. This was the Soviet Union's diplomatic explanation for the missiles. As stated by Khrushchev, "The Soviet government decided to help Cuba with means of defense against aggression—and only with mean [sic] for purposes of defense …We stationed them there in order that no attack should be made against Cuba and that no rash action should be permitted to take place."[116]
4. Cold War Politics—The missiles were introduced as a probe of American intentions. Kennedy by and large accepted this explanation.
5. Missile Power—The missiles were an effort to balance the strategic nuclear superiority of the United States. Although the Soviet Union had carefully fomented a worldwide belief in Soviet missile superiority, privately they knew they were far behind the United States. Placing missiles in Cuba allowed them to cheaply introduce a credible threat against the United States.

Using the theories presented above, ExCom developed three general courses of action to deal with the Soviet missiles:[117]

1. Diplomatic Response—This option sought to apply diplomatic pressure to the Soviets and to trade American missiles in Turkey and Italy for removal of the missiles in Cuba.
2. Destroy Missiles and Invade Cuba—The range of military options extended from a surgical airstrike to destroy the Soviet missiles to a full-scale invasion to replace the Castro regime.
3. Blockade—This option was designed to demonstrate American resolve over the issue while allowing the Soviets the opportunity to back down.

Although under pressure from many, including the military services, to choose the most aggressive option, President Kennedy selected the blockade option. To announce his intentions

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[114] Roger Hilsman, *The Cuban Missile Crisis: The Struggle over Policy* (Westport, Conn., Praeger Publisher, 1996), 25.
[115] Allison, 43-56.
[116] Letter of Nikita Khrushchev to President John Kennedy, 28 October 1962, in Laurence Change and Peter Kornbluh, eds., *The Cuban Missile Crisis, 1962* (New York: The New Press, 1992), 226-227.
[117] Allison, 57-70.

to the Soviets and the world, Kennedy decided to make a national television address on 22 October. Before making this address, however, Kennedy decided he needed to inform key American allies.

Diplomacy and U-2 Imagery

In order to secure allied backing for the upcoming blockade, the administration sent teams to Britain, France, West Germany, and Canada to brief senior allied leaders on Soviet actions in Cuba and on the contents of President Kennedy's upcoming television address.[118] Although it was not the first time that the United States had released U-2 imagery to foreign heads of state (among others, De Gaulle had been shown photos disproving the missile gap during the Eisenhower administration),[119] the teams completely fulfilled their mission by objectively proving that Soviet nuclear-tipped missiles were now in Cuba: "Given the accuracy of the U-2 photographs and the uncertainty of agent and refugee reports, everyone realized that the only intelligence convincing enough to justify the kind of action that would be needed to remove the Soviet missiles from Cuba would have to be supplied by the U-2s."[120] Further, although the evidence in the photos impressed him, British Prime Minister Macmillan relayed the message that he needed the U-2 imagery publicly released to shore up his domestic opinion.[121]

On the evening of 22 October, President Kennedy gave his famous address to the nation during which he announced the presence of the Soviet missiles and the initiation of the quarantine. Although the administration had discussed the idea of releasing the U-2 imagery, in the speech Kennedy only mentioned that the United States had "unmistakable evidence" of the missiles.[122] Not surprisingly, the lack of any objective data being revealed allowed the Soviets to deny the placement of the missiles and accuse the United States of inventing the allegations as a pretext for invasion.

In a parallel effort to the quarantine, the administration decided to use the United Nations Security Council as a forum for rallying world opinion against the Soviets. Since the Soviet

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[118] Moser, 15.
[119] Brugioni, 36.
[120] Hilsman, 26.
[121] Brugioni, 329.
[122] President John F. Kennedy, address to the nation, Washington, D.C., 22 October 1962, as quoted in Chang and Kornbluh, 150.

Union, along with the United States, was a permanent member of the Security Council with veto rights over any resolution, the only benefit from going to the council was the possibility of proving the Soviets were not telling the truth. At the first debate on the Cuban Missile Crisis, on 23 October, Soviet Ambassador to the United Nations Zorin denied that offensive weapons had been placed in Cuba and ridiculed Kennedy's assertion that the United States had proof: "…the Soviet delegation hereby officially confirms the statements already made by the Soviet Union in this connection, to the effect that the Soviet Government has never sent and is not now sending offensive weapons of any kind to Cuba."[123] By this time, the administration, over the objections of some in the intelligence community, had decided to release the U-2 imagery if it was necessary: "The problem was that the intelligence community was afraid of revealing too much about intelligence methods and techniques and especially the high quality of photography achieved by the U-2 camera systems—in spite of the fact that the Soviets had learned a great deal about the quality of U-2 photography after they shot down Gary Powers…The president decided that the pictures had to be used and within the next few days they should also be released to the general public."[124]

On the morning of 24 October, some of the U-2 imagery appeared in the *Washington Post*.[125] The source of the imagery was the British government (Prime Minister Macmillan incorrectly thought he had been given permission to release the photos). Despite these pictures, Ambassador Zorin and official Soviet news organs continued to deny the existence of missiles in Cuba. Finally, on 25 October, in one of the most famous moments of the Cold War, United States Ambassador to the United Nations Adlai Stevenson took the floor in the Security Council to continue the debate over Cuba.

After giving Zorin (then serving as the Security Council president) the opportunity to confirm the existence of the missiles ("Do you Ambassador Zorin deny that the Soviet Union has placed and is placing [MRBMs and IRBMs] in Cuba? Yes or no—don't wait for the translation, yes or no?"), [126] Stevenson revealed the U-2 imagery that objectively demonstrated the

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[123] Ambassador V. A. Zorin, address to the United Nations Security Council, New York, 23 October 1962, available on-line, Internet, from http://www.fordham.edu/halsall/mod/1962-cuba-un1.html, n.p., 19 February 2002.
[124] Hilsman, 109.
[125] Brugioni, 398.
[126] Ambassador Adlai Stevenson, address to the United Nations Security Council, New York, 25 October 1962, available on-line, Internet, from http://www.mtholyoke.edu/acad/intrel/adlai.htm, n.p., 19 February 2002.

placement of the missiles. According to Roger Hilsman, then the director of the State Department's Bureau of Intelligence and Research, "…[Stevenson] turned to the enlargements of the U-2 photographs, convincing the world of Soviet guilt and mustering support for the action the United States was about to take."[127] According to Dino A. Brugioni, a CIA photo interpreter, "…a hush fell over the chamber and delegates and representatives strained to see the details. It was the first time that aerial photography, with all its irrevocable authority and impact, had been used in any arena to resolve international disputes."[128] Although Zorin would try to assert that the photographs were fakes, the damage had been done: "The Government of the United States has no such fact in its hands except these [sic] falsified information of the United States Intelligence Agency, which are being displayed for review in halls and which are sent to the press. Falsity is what the United States has in its hands, false evidence."[129] World opinion, particularly among the crucial Latin and South America states, swung strongly in favor of the United States and the Soviet Union was greatly discredited. This first public release of U-2 imagery for diplomatic effect had been a tremendous success. "The impact of bringing the aerial photos on to the Security Council floor was best described by DeWitt S. Copp: 'No other proof could have been more irrefutable, and no other proof would have been acceptable to many among ourselves, our allies, and, of course, those unsympathetic to us. The UN could not debate away the iron reality of the aerial photographs, nor could the world.'"[130]

Following three more days of intense diplomatic maneuvering, both public and private, Khrushchev finally backed away from war on 28 October. Complicating matters during these three days, a U-2 was shot down over Cuba on 27 October—an event that nearly resulted in armed conflict and was mentioned by Khrushchev as evidence of continued United States provocation.[131] In a letter to President Kennedy, the Soviet leader said, "…the weapons which you describe as offensive [will be] crat[ed] and return[ed] to the Soviet Union."[132] The final agreement was for the Soviet Union to remove their MRBMs and IRBMs, under United Nation's

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[127] Hilsman, 113.
[128] Brugioni, 428.
[129] Ambassador V. A. Zorin, address to the United Nations Security Council, New York, 25 October 1962, available on-line, Internet, from http://www.mtholyoke.edu/acad/intrel/zorin3.htm, n.p., 19 February 2002.
[130] Brugioni, 429.
[131] Letter of Nikita Khrushchev to President John Kennedy, 28 October 1962, as quoted in Chang and Kornbluh, 228.
[132] Ibid., 226.

supervision, and pledge not to reintroduce them, while the United States agreed not to invade Cuba and to consider removing its Jupiter missiles in Turkey and Italy in the near future.[133]

While the public release of U-2 imagery that conclusively proved the United States allegations was not the sole reason for the capitulation of the Soviets on 28 October, it played an indispensable role. No longer able to hind behind their allegations that the United States was fabricating the story, the Soviets had to face the possibility of actually fighting the Americans who enjoyed tremendous (albeit publicly unrecognized) nuclear and conventional (at least in the Caribbean) superiority.[134] The U-2 imagery, then, by previously dispelling the notion of a missile gap, and by securing world opinion in favor of the United States, gave Kennedy the latitude to strongly oppose the Soviets since he knew he was bargaining from a position of strength and could count on the support of key allies and hemispheric partners. After the crisis, when asked how much the U-2 imagery had been worth, President Kennedy was reported to have said "it fully justified all the CIA had cost the country in all its preceding years."[135]

The diplomatic power of objective information, as provided by U-2 imagery, is significant in that it establishes a baseline from which diplomatic initiatives can be pursued. President Eisenhower recognized this facet of imagery in the 1950s when he proposed the Open Skies Treaty to allow the United States and Soviet Union to openly overfly each other's territory to monitor military forces. Following the Soviet decision to remove its missiles in Cuba, the diplomatic power of objective information was once again recognized as the United States pushed the United Nations to incorporate aerial photography into its monitoring of the Soviet dismantling of their missiles in Cuba: "While aerial photography does not guarantee one hundred percent knowledge of situation nevertheless it is vastly superior, more thorough, more efficient and economical than Nineteenth Century approach based entirely on observation on the ground confined to previously established weapon sites."[136] In addition to its uses in building

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[133] Whether the United States actually traded its missiles in Turkey and Italy for the Soviet missiles in Cuba has been greatly discussed over the years. I accept the theory that Robert Kennedy all but formally agreed with Soviet Ambassador to the United States Anatoly Dobrynin that the missiles would be removed if the Soviets did not publicly discuss the "understanding."

[134] Brugioni, 254; "[A quick review of the strategic situation] estimated that the U.S. nuclear-strategic lead advantage was at least 7 to 1. (Soviet officials, in meetings with Americans in Moscow in January 1989, stated that the ratio was more than 15 to 1 in favor of the U.S.)"

[135] Ibid., 550.

[136] Department of State to the United States Mission to the United Nations, telegram, 28 October 1962, available on-line, Internet, from http://www.yale.edu/lawweb/avalon/diplomacy/forrel/cuba/cuba105.htm, n.p., 19 February 2002.

internal government intelligence assessments and in verifying international agreements, the public release of U-2 imagery during the Cuban Missile Crisis shows the diplomatic power that can be leveraged by objective information. By publicly releasing unequivocal evidence of the missiles in Cuba, the Soviet Union could no longer dodge the previously ineffective statements by American officials regarding the "unmistakable evidence" the United States claimed to have.

Cuban Missile Crisis: Conclusion

The impact of the Cuban Missile Crisis on the course of world affairs was significant. By exposing the Soviet bluff of how they would stand up to the United States, the United States undermined Soviet prestige in the world and publicly embarrassed Khrushchev. Within a year, Khrushchev, who was in many ways an anti-Stalinist reformer, was removed from power and replaced by much harder-line leaders—led by Leonid Brezhnev.[137] While Khrushchev had bluffed the world into thinking the Soviets had nuclear superiority over the West, he had resisted the massive investments required to actually do it (according to his son, Khrushchev understood that economic investment was the Soviet Union's top priority).[138] Brezhnev, however, would have no such misgivings and would firmly commit to spending the resources necessary to achieve Soviet nuclear superiority.[139] In the end, then, the objective data provided the U-2 imagery allowed the United States to achieve its diplomatic goal and remove the missiles from Cuba, but it was also powerful enough to lead to a leadership change in the Soviet Union—an outcome that probably deepened and prolonged the Cold War.

The development of the U-2, and later the SR-71 and the reconnaissance satellite, changed the nature of strategic intelligence. No longer strictly dependent on human intelligence and signals intelligence, aerial photography gave the United States objective information on the closed Soviet society. By providing American administrations with evidence to refute the public claims of Soviet superiority, the United States could more confidently pursue its foreign policy goals and resist Soviet bluffing. Until 25October 1962, however, American administrations were unwilling to publicly release the objective information they had. Following Ambassador Stevenson's masterful presentation to the United Nations, the power of releasing objective information was clearly demonstrated—a power that would continually bump up against the

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[137] Brugioni, 558.
[138] Launius, Logsdon, and Smith, 283.

need to protect intelligence sources and methods.

NAVAL DIPLOMACY

One facet of the Cuban Missile Crisis not covered in depth above was the use of United States Navy ships to exert diplomatic pressure on the Soviet Union and Cuba. Along with the quarantine used to interdict Soviet missiles, the Navy also positioned two aircraft carriers off the coast of Cuba to show the flag and be prepared for strike operations. In these latter two roles, the Navy was participating in one of the oldest of naval missions—presence. The intended message of this carrier deployment was to signal to the Soviets and the Cubans that the United States was ready to take credible military action, if necessary, to remove the missiles. While the purpose of this study is not to analyze the Navy's significant contribution to the Cuban Missile Crisis, it will briefly review how navies have been used in the past to exert diplomatic pressure. In modern parlance, these types of activities are referred to as naval diplomacy, while the mechanism to achieve that diplomatic pressure is called forward presence.

Forward presence is a term used by many within the defense establishment to refer to a concept that is, at best, ambiguously defined. While organizations, leaders, and scholars have defined forward presence differently, the notion common to most of these definitions is that military forces operating in forward locations can exert diplomatic pressure both through coercive acts (positive or negative) and through their location with regard to a given location.[140] Another idea common to most definitions of forward presence is that "the precise benefits of forward presence are difficult to quantify."[141] "It is usually difficult to assess the effect of Naval Presence alone on decisions which of necessity are made as the outcome of reaction to a broad

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[139] Brugioni, 558.

[140] A sampling of definitions follow: Brent Alan Ditzler, "Naval Diplomacy Beneath the Waves: A Study of the Coercive Use of Submarines Short of War," (master's thesis, Naval Postgraduate School, December 1989), 2; "A political use of armed force occurs when physical actions are taken by one or more components of the uniformed military services as part of a deliberate attempt by the national authorities to influence, or to be prepared to influence, specific behavior of individuals in another nation without engaging in a continuing contest of violence." Lieutenant Colonel Bernard H. Fullenkamp, "Forward Presence and the Search for Peacetime Influence" (Naval War College, 16 May 1994), 6; "The goal of forward presence is influence which can shape the future concept of conflict." James S. Thomason and D. Sean Barnett, *IDA Analyses of Overseas Presence for the Commission on Roles and Missions (annotated briefing)*, IDA Document D-1725 (Washington, D.C.: IDA, June 1995), 5; "Overseas Presence…A tool to influence, reassure, deter, and enable initial crisis response." Lieutenant Commander Kenneth R. McGruther, "The Role of Perception in Naval Diplomacy," *Naval War College Review*, September-October 1974, 3; "[Naval Presence is] the use of naval forces short of war to achieve political objectives."

range of American signals—military, economic, and political—perceived by other nations."[142] While we may be able to clearly identify when forward presence has failed to exert sufficient diplomatic pressure (i.e., when a state we are trying to influence toward a certain action fails to act in the way we want), it is difficult to quantify the concrete positive benefits it produces (i.e., like deterrence, we can never truly say it has succeeded). Consequently, those who advocate forward presence as a primary mission of military forces frequently do so as an article of faith. Questioning that faith can bring intense debates and interservice rivalries.[143] The following discussion will avoid that debate for the time being (see Chapter 4) and will only look at how navies in general, and the United States Navy in particular, a service with a historic view of its role in achieving United States diplomatic goals short of war, have used their fleets in a forward presence role to exert diplomatic pressure.

Forward Presence: Historical Examples

For as long as nations have sent their navies to sea, they have attempted to exert influence over their enemies: "The use of armed force short of war to gain political advantage has been practiced throughout history. Also historically, navies have commonly been the military-diplomatic instrument of choice for projecting—explicitly or implicitly—the threat of politics by other means."[144] While combat at sea was the ultimate expression of a navy's capabilities, nations frequently used their fleets to send signals, short of sustained war, to their enemies and friends alike. For example, in Thucydides' masterpiece *The Peloponnesian War* he records the first naval battle of that war. In 433 BC, Corinth of the Peloponnesian League began to threaten

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[141] Department of the Navy, "Naval Forward Presence: Essential for a Changing World," 1993, on-line, Internet, 17 February 2002, available on-line at http://www.chinfo.navy.mil/navpalib/policy/fromsea/ftsunfp.txt, 3.

[142] Commander James F. McNulty, "Naval Presence—The Misunderstood Mission," *Naval War College Review*, September-October 1974, 28.

[143] Secretary of the Air Force Sheila E. Widnall and Chief of Staff of the Air Force General Ronald R. Fogleman, "Global Presence," *Joint Forces Quarterly*, Spring 1995, 95. During the mid-1990s, the Air Force and the Navy publicly disagreed over the future of forward presence. Following the publication of the Air Force's *Global Presence*, a statement by the Secretary and Chief of Staff advocating a reconsideration of forward presence to account for new global monitoring and strike technologies (amounting to "virtual presence"), the Navy/Marine Corps leadership reacted strongly in a series of speeches and articles that defended the traditional role of the aircraft carriers in forward presence (the pithy tag line being "virtual presence is actual absence"). While neither side named names, it was evident that both sides were taking aim at the other. For an airman's take on this controversy (with veiled references to the Navy), see Major Bud Jones, "The Objective is Influence, not Presence: or, It's Influence (not Presence) Stupid!," *Aerospace Power Chronicles—Contributor's Corner* , n.p., on-line, Internet, 18 February 2002, available from http://www.airpower.maxwell.af.mil/airchronicles/cc/influenc.html. For a sailor's view, see Lieutenant Commander James Paulsen, "Is the Day of the Aircraft Carrier Over?" (Air Command and Staff College, April 1998), on-line, Internet, 18 February 2002, available from http://papers.maxwell.af.mil/projects/ay1998/acsc/98-217.pdf.

Corcyra over the Corcyraeans treatment of the colony of Epidamnus. Appealing to Athens for help, and reminding the Athenians that it would be devastating if the Peloponnesian League captured the large Corcyraean fleet, Corcyra convinced Athens to enter into a defensive alliance. Wanting to avoid open conflict with Sparta, the leader of the Peloponnesian League, Athens sent a small fleet to Corcyra to demonstrate its resolve in supporting its new ally: "With these views, Athens received Corcyra into alliance, and on the departure of the Corinthians not long afterwards, sent ten ships to [Corcyra's] assistance…Their instructions were to avoid collision with the Corinthian fleet except under certain circumstances…These instructions were prompted by an anxiety to avoid a breach of the treaty."[145] Although the Athenian expedition to Corcyra resulted in combat when the Corinthians routed the Corcyraeans, the hope of the Athenians was that the mere presence of the fleet would give pause to the Corinthians and cause them to forego their attack.[146]

Just as the Athenians attempted to use their navy to influence events in far away places, the history of the United States Navy is replete with attempts to use forward presence to achieve naval diplomacy. In the 19th Century this type of forward presence became known as gunboat diplomacy.[147] In what is probably the most famous, or infamous, case of early gunboat diplomacy, the East India Squadron under Commodore Matthew Perry was given the mission in 1852 "to negotiate a treaty with Japan guaranteeing safe treatment and repatriation of shipwrecked American sailors and opening Japanese ports to American commercial penetration."[148] Seeking to end the Dutch monopoly over trade with Japan, Commodore Perry twice visited Japan to negotiate a treaty favorable to the United States. On 31 March 1854, during his second visit in which eight United States Navy warships remained anchored off the shore, Perry signed the Treaty of Kanagawa that opened two Japanese ports for emergency provisioning and resupply of American flagged vessels, guaranteed safe treatment of shipwrecked sailors, and secured most favorable nation trading status for the United States

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[144] Ditzler, 1.
[145] Robert S. Strassler, ed., *The Landmark Thucydides: A Comprehensive Guide to the Peloponnesian War* (New York: The Free Press, 1996), 28.
[146] Ibid., 16-32.
[147] Vice Admiral Stansfield Turner, "Missions of the U.S. Navy," *Naval War College Review*, March-April 1974, 4.
[148] Kenneth J. Hagan, *This People's Navy: The Making of American Sea Power* (New York: The Free Press, 1991), 147.

(although actual trade authority would come later).[149] Negotiated with the implicit threat of naval bombardment hanging over the Japanese, the Perry mission became a watchword for gunboat diplomacy for the next 100 years.

Forward Presence: The Navy View

According to the United States Navy, the forward presence produced by the continual rotation of aircraft carrier battlegroups in the Mediterranean Sea, the Western Pacific, and the Arabian Sea is a prime factor in ensuring regional stability and shaping the international environment in a manner conducive to American foreign policy goals. Since World War II, however, the position the Navy has taken on forward presence has evolved. Beginning with a traditional view of forward presence as a by-product of its other missions, the Navy as an institution has increasingly embraced the presence mission as its core contribution to peacetime operations. Not surprisingly, the Navy's post-World War II views have been largely shaped first by the Soviet threat, and second by the dissolution of the Soviet Union.

Following World War II, "the Navy saw power projection as the primary mission of naval forces, one to be carried out principally by carrier-based aircraft."[150] Although the Navy battled with the Air Force over defense unification and the strategic bombing mission, its focus was on a blue water strategy of securing command of the sea and projecting American military power abroad. With the growing Soviet blue water naval capability, the United States Navy saw its mission as containing Soviet expansion, destroying the Soviet Navy (in case of war), securing command of the sea, and contributing to nuclear deterrence: "During the Cold War, military forward presence was tasked to do a variety of missions but all other missions were subordinate to the task of containment."[151] As part of this strategy, the Navy recognized the diplomatic leverage its forces could produce when forward deployed: "…the navy gradually began to use aircraft carriers as an overseas 'presence' with the threat of overflight by navy bombers as an inducement to better behavior on the part of small or 'third world' nations."[152] During the China-Taiwan crises of 1954 and 1958, for example, the United States deployed Navy carriers to the Formosa Straits as a signal to the Communist Chinese of the concern the United States had

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[149] Ibid.
[150] Carl H. Builder, *The Masks of War: American Military Styles in Strategy and Analysis* (Baltimore: The Johns Hopkins University Press, 1989), 76.
[151] Fullenkamp, 6.

for the Republic of China.[153] In 1970, then Chief of Naval Operations Admiral Elmo Zumwalt codified the Navy's post-World War II view of its missions by explicitly listing the Navy's four missions in priority order:[154]

1. Strategic nuclear deterrence
2. Sea Control
3. Projection of national power
4. Naval presence

While this ordering of the missions listed forward presence as the lowest priority, it was recognition that diplomatic influence was a key naval role.

In the early 1980s, the United States Navy underwent a massive expansion during the Reagan defense build up. Looking for a strategy to best utilize its growing fleet, the Navy developed the concept of the Maritime Strategy. Under this strategy, if war occurred between the United States and the Soviet Union, the Navy planned to sail its carriers to the Soviet home waters from which it would prosecute an offensive campaign directly against the Soviet Union. During this period, forward presence for diplomatic leverage (largely conducted through port calls, exercises with allied navies, and show the flag operations near potential crisis spots) remained an ancillary mission for the Navy as it prepared for battle against the Soviets. The total focus of the Maritime Strategy on prosecuting high-end war against the Soviets, however, led one observer to state, "One of the problems with the Maritime Strategy was that, at least on the surface, it ignored more traditional naval missions such as naval presence…"[155]

With the end of the Cold War in 1989, the Navy began searching for a strategy to deal with the demise of the Soviet Union and the resulting new security environment. In 1992, in a crystallization of a yearlong planning effort within the Department of the Navy, the Navy and Marine Corps leadership published a white paper on their vision for the sea services. Entitled *...From the Sea*, the paper stated that the Navy/Marine Corps team was reorienting toward a littoral strategy that intended to focus on influencing events ashore. As part of this strategy, the Navy stated its highest peacetime priority was achieving diplomatic benefits by the forward presence of naval vessels: "Our forces can help to shape the future in ways favorable to our

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[152] Hagan, 353.
[153] Douglas Porch, "The Taiwan Strait Crisis of 1996: Strategic Implications for the United States Navy," *Naval War College Review*, Summer 1999, 15.
[154] McNulty, 21.

interests by underpinning our alliances, precluding threats, and helping to preserve the strategic position we won with the end of the Cold War…Naval Forces will be prepared to fight promptly and effectively, but they will serve in an equally valuable way be engaging day-to-day as peacekeepers in the defense of American interests. Naval Forces are unique in offering this form of international cooperation."[156] Rather than viewing forward presence as an auxiliary mission that was a by-product of its other more important missions, the Navy now viewed forward presence as a *raison d'etre* and a rational for its force size: "…in the post-World War II American navy, 'presence' was always the last and least justification of naval power, the residual category. '…From the Sea' reversed that prioritization: 'presence' was the Navy's unique contribution."[157]

During the 1993 Bottom Up Review (BUR), an early Clinton Administration effort to determine the proper United States force structure, the Navy made a case that it needed to maintain an extra aircraft carrier to fulfill its presence requirements. Accepting this argument, Secretary of Defense Les Aspin added one additional carrier and associated air wing to the BUR findings. Additionally, during the deliberations for the Congressionally mandated Commission on Roles and Missions (CORM) in 1995, Secretary of the Navy John Dalton made a request that forward presence be given to the Navy and Marine Corps as a primary function. While the CORM turned down this recommendation, since each of the other services also played a valuable role in forward presence, Dalton's recommendation served as an indicator of the value placed by the sea services on their ability to diplomatically influence events around the globe.[158]

Forward Presence: Conclusion

The ability of navies to provide diplomatic leverage has long been recognized by nations. With the capability to forward deploy, remain in international waters, stay on station long lengths of time, engage with friendly countries when needed, monitor crisis spots, withdraw when no longer needed, and respond with military power, naval forces have exerted this power to great success. In the post-Cold War years, the United States Navy has gone beyond simply using its ships in a forward presence role to secure diplomatic advantage. It has now embraced the

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[155] James L. George, *The U.S. Navy in the 1990s* (Annapolis, Md.: Naval Institute Press, 1992), 79.
[156] Quoted in *…From the Sea*, in Edward Rhodes, "*…From the Sea* and Back Again: Naval Power in the Second American Century," *Naval War College Review*, Spring 1999, 27.
[157] Ibid.

concept of forward presence as one of its central missions and as justification for the force structure it wants to maintain. While at times the Navy's advocacy of its role in forward presence has led to conflicts with the other services, the Navy has reemphasized its historical understanding of the role of navies. Rather than seeing themselves as a force only to be used in wartime, the United States Navy sees its role as shaping the international environment in a manner conducive to American interests. Whether this shaping takes place by overt military force or by naval diplomacy through forward presence is immaterial—in either case, the Navy is prepared and the interests of the United States are furthered.

CONCLUSION

The historical record is full of examples in which military forces were used in roles short of combat to achieve diplomatic objectives. Since warfare is, as explained by Clausewitz, the furtherance of politics by other means, it is not surprising to find that states have used their means of war (i.e. military assets) to pursue policy objectives throughout the spectrum of conflict from peacetime to total war. As has been seen in the case studies on Sputnik, the use of U-2 imagery during the Cuban Missile Crisis, and naval diplomacy, space assets and military forces can have significant intended and unintended diplomatic effects. Unfortunately, as was revealed in Chapter 2, most military thinking regarding space assets within the United States is focused on how they enable terrestrial forces to the detriment of considering how those assets can directly pursue diplomatic objectives. Building upon the examples of prestige, legal precedent, objective information, and presence described above, Chapter 4 will categorize the inherent diplomatic power of current military space assets and lay the groundwork for specific recommendations in Chapter 5.

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[158] Thomason and Barnett, 3.

Chapter 4

Space Assets' Inherent Diplomatic Power

Today, space power suffers from an unusual malady—an acute shortage of space focused strategic theory and the lack of a binding concept to aid understanding of what it is all about.

--Colin S. Gray

Of all the findings of SPACECAST 2020, none is more compelling than the observation that global presence through robust space operations is critical to the security of our nation.

--SPACECAST 2020 Report

From its initial emphasis in the late 1950s as a means of superpower competition, through today's use of space assets to enable terrestrial military forces, space power has conferred diplomatic advantages to those nations able to employ it. Even so, its potential remains underdeveloped. Since space is the newest medium in which military forces operate, it is to be expected that policy makers have not used space assets as tools of diplomacy to the same degree they have used other, more traditional means. Yet, their lack of focus on this particular tool or means is perplexing. Such esteemed space theorists as James Oberg have misunderstood the power of space assets to affect diplomatic objectives. He states, "Space power, alone, is insufficient to...ensure the attainment of terrestrial political objectives."[159] As affirmed in Colin Gray's statement above, space professionals have given insufficient thought to (among other strategic implications of space assets) codifying precisely how, when, and where to use space assets for diplomatic purposes short of combat. The analysis that follows seeks to fill part of this void by classifying the diplomatic uses of space assets.[160] While the model presented is holistic in its applicability across the spectrum of conflict, its rudimentary nature is evidence that future theorists and strategists still need to accomplish much work.

Exploiting space systems to directly achieve diplomatic objectives is a capacity available now, and this opportunity is due to a confluence of trends. First, an increasingly important characteristic of the post-Cold War world is the escalating impact of globalization and

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[159] James E. Oberg, *Space Power Theory* (Washington, D.C.: Government Printing Office, 1999), 127.

[160] Classification is a time-honored method for beginning analysis, as it reveals and prompts key questions, allowing more sophisticated and subtle analyses to follow.

interdependency among states. Particularly among the most developed states, those participating heavily in the information age, the development and distribution of knowledge is replacing the manufacturing and distribution of goods as society's central source of wealth, prestige, and power.[161] The linkages connecting these states to the outside world and to elements within their own societies are becoming indispensable, as these are the conduits for information exchange. Especially for states with global trade and military interests, and despite the enormous growth of fiber optics technology for data transmission and communications, space assets are a critical component for these information transactions. The same holds for lesser-developed states, particularly if their internal communications infrastructures are rudimentary or fragmented. For the United States, DoD Directive 3100.10, *Space Policy,* states the case flatly: "The globally interdependent information- and knowledge-based economy as well as information-based military operations make the information lines of communication to, in, through, and from space essential to the exercise of United States power."[162]

Because of this growing globalization and interdependence, a second trend has emerged in which states are becoming more dependent on space systems for the well being of their societies. International commercial trade and finance are reliant on space assets for competitive efficiency. People, too, are slowly changing, in part from just the notion and perception of space utilization. The enormity of space, which highlights humanity's fragile existence, creates a sense of global closeness previously unrealized. Space assets, which provide instant communication and visual images from dazzling perspectives, cement the sense of interconnectivity. As declared by Steven Lambakis, "Satellites…have spawned a global social revolution, affecting how we think and go about our daily business, entertain ourselves, and relate at home and abroad to our family, friends, and business associates."[163] The character and role of space is becoming so pervasive that the ability to use space assets to influence other states and thus directly achieve diplomatic objectives is rapidly emerging, if not already at hand.

Explaining and categorizing the diplomatic uses of space assets is done to better inform the policy-making community of the potential uses of this important tool of statecraft. David

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[161] See Alvin Toffler, *The Third Wave* (New York: William Morrow and Company,1980).
[162] Department of Defense Directive 3100.10, *Space Policy*, 9 July 1999, 2.
[163] Steven Lambakis, *On the Edge of Earth: The Future of American Space Power* (Lexington, Ky.: The University Press of Lexington, 2001), 5, 14. Lambakis goes to far as to say, "[Communications satellites] were, and are, the true catalysts for globalization, or the worldwide melding together of different financial and economic systems."

Baldwin points out that, "Improved understanding of statecraft is one of the most valuable contributions that scholars can make to the functioning of democratic political processes."[164] Certainly, the American military is not responsible for making foreign policy (a point already made in Chapter 1). Nevertheless, it does play an important role in foreign policy's execution through the interagency process and through the regional engagement activities of the unified commands. In that sense, military professionals are an important part of the foreign policy community. Their input is highly sought, heavily valued, and weighed carefully by civilian policy-makers. Moreover, as professionals, it is their duty to provide the best, most considered input possible.

A caution is necessary at this point. The following discussion does not seek to be a cookie cutter prescription—that would be impossible given the multitude of contextual factors that surround each attempt at diplomatic influence. As described by Clausewitz in his discussion on the role of academic theory on the battlefield, "theory cannot equip the mind with formulas for solving problems, nor can it mark the narrow path on which the sole solution is supposed to lie by planting a hedge of principles on either side. But it can give the mind insight into the great mass of phenomena and of their relationships, then leave it free to rise into the higher realms of action."[165] If the model described below is able to inform the mind of the military professional, reveal linkages that existed before the model sought to describe them (and thus make them appear to be obvious), and lead to better decisions by enlightening the judgment, the model will have accomplished much more than hoped.

The Space-Diplomacy Model

When seeking to explain the inherent diplomatic power of space assets, it is useful to draw upon existing works that describe how states have used other important classes of statecraft as diplomatic tools. One appealing example is the work of David Baldwin in *Economic Statecraft*. In the sense that economic sanctions (both positive and negative) are non-violent techniques (as compared to combat) of influencing international actors, the economic instrument of power is analogous to the manner in which space assets might influence world events short of

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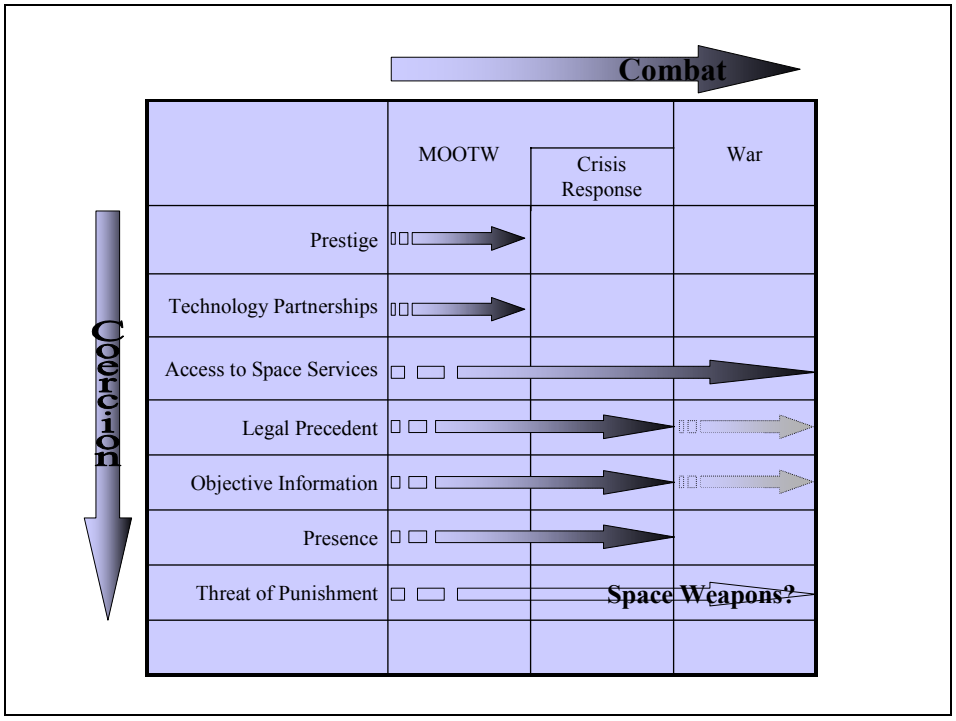
[164] David A. Baldwin, *Economic Statecraft* (Princeton, N.J.: Princeton University Press, 1985), 28.
[165] Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, N.J.: Princeton University Press, 1984), 578.

directly employing weapons (a capability that does not currently exist). While space assets surely enable terrestrial forces, and make them more effective in combat and in their own diplomatic uses, this enabling function is not a direct use of space assets. It is the *direct* uses of space assets to which the Space-Diplomacy model applies (see Figure 1). To the extent that space assets' non-violent nature links it as an instrument of power to economics, Baldwin's work on how to develop a taxonomy to explain an instrument's ability to influence is useful.

Figure 1: Space-Diplomacy Model



According to Baldwin, the choice of the categories that fit into a model of statecraft instrumentality is important: "The selection of a particular taxonomy, however, is not a purely arbitrary undertaking, but rather should proceed according to specified criteria."[166] Further, he specifies those criteria:[167]

1. Mutually exclusive and exhaustive of all cases
2. Avoidance of unnecessary departures from common usage

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[166] Baldwin, 12.
[167] Ibid.

3. Utility in identifying and clarifying policy options for modern statesmen (i.e., not too many categories, nor too few)

Using these criteria, the Space-Diplomacy model identifies space assets' diplomatic power and shows where in the spectrum of conflict such uses of power can be effective.

The Space-Diplomacy model highlights two important factors. The first is the classification of space assets' inherent diplomatic power. Conforming to Baldwin's criteria regarding taxonomies, seven categories of diplomatic power are proposed that space assets bring to bear, listed in increasing order of coerciveness (that is, the potential to change the behavior of an international actor not otherwise disposed to make the desired change). The categories are prestige, technology partnerships, access to space services, legal precedent, objective information, presence, and threat of punishment. Given today's level of technology, current space assets can directly fulfill the first six categories, but they cannot directly threaten punishment. The majority of this chapter will explain each of the seven categories.

The second important factor emphasized in the Space-Diplomacy model is the spectrum of conflict through which the diplomatic uses of space assets occur. The first category in the spectrum, military operations other than war (MOOTW), encompasses the use of military assets short of sustained combat. As defined in the Joint Doctrine Encyclopedia, MOOTW are "Operations that encompass the use of military capabilities across the range of military operations short of war. These military actions can be applied to complement any combination of the other instruments of national power and occur before, during, and after war."[168] Further, Joint Doctrine recognizes the important interaction of military and political purposes during MOOTW: "In MOOTW, political considerations permeate all levels and the military may not be the primary player."[169] This is the entry point for space diplomacy.

Responses to MOOTW "focus on deterring war, resolving conflict, promoting peace, and supporting civil authorities in response to domestic crises."[170] These emphases are particularly suited to the diplomatic potential of space assets. Because MOOTW defines such a broad continuum of military operations, from the combined training exercises the United States conducts with its close allies to operations that include fighting (not including sustained combat,

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[168] Joint Chiefs of Staff, *Joint Doctrine Encyclopedia*, 16 July 1997, 512.
[169] Ibid., 513.
[170] Ibid.

however), I have separated out a sub-category within MOOTW. "Crisis response" delineates those military operations conducted to deter or limit a heightened level of actual or potential violence, or crisis—the most sensitive or volatile conditions short of war. Again, drawing on established Joint Doctrine: "The ability of the US to respond rapidly with appropriate military operations other than war (MOOTW) options to potential or actual crises contributes to regional stability."[171]

The third, and most limited, category of conflict in the Space-Diplomacy model is war. While the United States Constitution reserves the right of declaring war to the Congress, the term as used in the model refers to "large-scale, sustained combat operations to achieve national objectives or protect national interests…In such cases, the goal is to win as quickly and with as few casualties as possible, achieving national objectives and concluding hostilities on terms favorable to the United States and its multinational partners."[172] Using this definition, the 1991 Persian Gulf War and the 1999 Air War over Serbia qualify as periods of "war," despite the fact that the United States Congress did not formally declare war in these large scale military operations.

As is apparent in the model, I propose that each category of space assets' inherent diplomatic power is effective over a definable range of the spectrum of conflict. In the sections that follow, I will explain each of the facets of space assets' diplomatic power and discuss how the spectrum of conflict affects each facet's potential effectiveness in providing diplomatic leverage for the United States.

Prestige

As described in Chapter 3, the Soviet Union's unexpected launch of Sputnik in October 1957 changed how the global community and the United States viewed that country. Although the achievement was a specific technological triumph for the Soviets, the status that achievement bestowed went far beyond even their own expectations. Not only was it perceived as an affirmation of their scientific proficiency, it conferred increased respect, admiration, and openness toward their political, economic, and social systems. As described by Paul Dickson, "When the first Sputnik was launched on 4 October 1957, much of the promise of the future

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[171] Ibid., 219.
[172] Ibid., 731.

seemed to shift to the East."[173] In short, the launch of Sputnik crystallized the Soviet Union's place as a superpower (whose only peer was a possibly fading United States), while also linking spacepower to the concept of prestige.

The value of prestige as one of space assets' diplomatic power components is surely rooted in the revolutionary nature of spaceflight—particularly when viewed from the late 1950s. As a medium that had captured the imagination of virtually every human culture, the launch of a manmade object into space marked a fundamental transition point in history that the entire world recognized. Not surprisingly, the international community viewed the country that achieved this remarkable success in a new light. Forty-five years have passed since the symbolic dawn of the space age, yet it is still fair to investigate whether space assets continue to provide similar levels of prestige, and, if they do, how could that prestige translate into diplomatic advantage.

In the nineteenth century, great power status was awarded primarily on the basis of military power. Although by the early twentieth century, economic or manufacturing capacity became part of the great power equation, the discovery of atomic, then nuclear weapons created the new category of superpower: "In the immediate postwar period, for example, the United States' monopoly of nuclear weapons was of great importance to the common perception that it was the most powerful nation. Similarly, once the Soviet Union also obtained a nuclear capability, that was of great value to the success of Soviet diplomacy. Given these precedents, it should not have been surprising that several nations—France, China, and perhaps others—sought to enhance their influence in world affairs through the development of nuclear weapons."[174] The proliferation of nuclear weapons in recent years, however, has not elevated newly nuclear countries (e.g., Israel, India, and Pakistan) into superpower or great power status. On the other hand, states that have elected not to acquire nuclear weapons, but have extensive space assets performing a full range of functions derive tremendous amounts of prestige from that space capacity, and are routinely placed into at least the great power category (e.g., Japan and Germany). In this manner, prestige translates directly into power status. While the novelty of space activities and space travel has diminished over the years (major networks continue live

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[173] Paul Dickson, *Sputnik: The Shock of the Century* (New York: Walker Publishing Company, 2001), 154.
[174] Barry M. Blechman and Stephen S. Kaplan, *Force without War: U.S. Armed Forces as a Political Instrument* (Washington, D.C.: The Brookings Institution, 1978), 5.

broadcasts of Space Shuttle launches, however), space assets are a defining and distinguishing feature of American superpower status. At least for now, the United States is universally recognized as the greatest of the superpowers. The French foreign minister has gone so far as to create a new category, recently calling the United States, in derisive fashion, a "hyperpower."[175]

Today, the United States is the only true global space power able to conduct the full range of military, civil, scientific, and commercial space services. At the same time, the demise of Russia (the heir to the Soviet Union's superpower title) as a superpower has coincided with the demise of that country as a great space power. Even Russian President Vladimir Putin has acknowledged this linkage of space prowess to superpower status by stating that without space exploration, "Russia will not have the right to lay claim to a worthy place in the civilized world."[176] While still able to provide virtually any of the space services offered by the United States, Russia can no longer perform them all simultaneously. Whether Russia's loss of prestige in the world community is partly due to her demise as a great space power, or whether the decline of her space abilities is only reflective of other systemic problems that led to her downfall as a superpower, space programs serve as measuring device for the relative status of nations. In an excellent summary of this concept, Lambakis avers, "Space activities are a measure of national prestige and an indicator of a country's weight on the scale of global power."[177]

In today's post-Cold War environment, space assets, in conjunction with stealth technology, precision guided munitions (PGMs), and global mobility, make the United States the world's undisputed leading air and space nation. To borrow a construct from Clausewitz, the terms the United States uses to describe its air and space forces share the same "grammar" as the forces of other first world military powers, but the "logic" of American air and space forces (i.e., their capabilities and linkages to other forces) has so far outstripped those of other air forces to represent an order of magnitude difference in ability. While an American and allied officer may each refer to their nation's "airpower," they are talking past each other since the meaning

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[175] "The View from France's Foreign Minister," *Business Week Online*, 29 Jan 01, n.p., on-line, Internet, 20 March 2002, available from http://www.businessweek.com/2001/01_05/b3717011.htm.
[176] "Putin Calls Space Exploration Vital for Russia's Security," *AP Wire Report*, 23 Jan 02, n.p., on-line, Internet, 18 March 2002, available from Google cache at http://www.google.com/search?q=cache:kEgAOWWbsJQC:www.cnn.com/2002/TECH/space/01/22/russia.security.ap/+%22Putin+calls+space+exploration+vital+to+Russia%27s+security%22&hl=en.
[177] Lambakis, 55.

each pours into the term is drastically different. This qualitative edge in air and space capability is the primary reason the global community views the United States as the world's leading military power—once again contributing to America's overall prestige.

As described in the Space-Diplomacy model, prestige is a limited tool of diplomacy. While military space assets greatly contribute to the overall level of prestige the United States enjoys on the international stage,[178] the United States cannot effectively leverage this prestige during crisis response and war. This inability to directly achieve American diplomatic goals during such times is not surprising. Prestige by its very nature is not coercive—that is, it cannot force a state to change its behavior in a manner consistent with United States' desires—though it may induce states to act in a manner they hope will curry favor.[179] It does, however, along with the United States' other power attributes, help to establish the international order in a favorable manner by conferring on the United States superpower status. Once accepted by other states, this superpower status allows the United States a prominent, if not preeminent, voice in virtually every international forum. So important is the prestige derived from being the leading space power, former Vice President Quayle gave the following justification for building the International Space Station (ISS): "The ultimate mission of the Space Station is…the reaffirmation of the leadership in space of the United States of America."[180] The leadership role the United States enjoys provides diplomatic advantage across the globe.

Although prestige affords the United States privileges during peacetime and encourages other states to want to ally themselves to America, prestige also can engender resentment and resistance from other states. An increasing separation between American and North Atlantic Treaty Organization (NATO) military capabilities, primarily caused by America's exploitation of space assets, stealth, PGMs, and long-range airlifters and tankers, is bringing about a growing problem within the North Atlantic alliance. The approaching incompatibility between American and Allied military equipment and employment is already creating considerable

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[178] Ibid., 24. According to Lambakis, "The 'dirty little secret' is that US military purposes and the visionary work done by the armed forces and the military laboratories are largely responsible for the country's current position of leadership in space."

[179] Antonio Gramsci, *The Modern Prince & Other Writings* (New York: International Publishers, 1967). According to Gramsci, true power is the ability to have others fulfill one's desires without so much as expressing one's preferences, much less expending coercive force.

[180] Matthew J. Von Bencke, *The Politics of Space: A History of U.S.-Soviet/Russian Competition and Cooperation in Space* (Boulder, Colo.: Westview Press, 1997), 105.

geostrategic problems that may have significant ramifications in the years to come. Moreover, some NATO allies, such as France, have based part of their foreign policy on counterbalancing United States influence in the world and in developing indigenous space capabilities to increase their own prestige and decrease dependence on the United States. On balance, however, the diplomatic advantages conferred on the United States because of its international space leadership, and hence the prestige it enjoys, far outweigh the disadvantages.

Technology Partnerships

The second component of space assets' diplomatic power is the ability to induce international actors toward desired behaviors, or away from undesirable behaviors, through the granting or termination of technology partnerships. Although this power is fundamentally coercive in nature, it is generally perceived as a relatively benevolent form relying on the promise of benefits to the target state rather than threatening punishment. Called "persuasive influence" by Lt Col Gregory M. Billman, he defines it as "action taken…to benefit another side in some way. Noteworthy is the lack of threatening force to effect a change in an entity's behavior."[181] Interestingly, "Cooperative uses of the armed forces have occurred far less frequently than have coercive uses."[182] As such, this is an area ripe for investigation. Since, by its very nature, the ability to negotiate and carry out technology partnerships occurs over long time periods (measured in years and decades rather than weeks and months), this facet of space assets' diplomatic power is normally only effective during peacetime. Further, since the nature of a partnership implies an ability by both parties to contribute to their mutual goals (although the contributions may not be equal), space technology partnerships are most effective among first and second world countries with some industrial or scientific capacity capable of being oriented toward space technologies.

One example of space technology partnerships directly achieving American diplomatic objectives took place following the demise of the Soviet Union. In the early 1990s, while Vice President Quayle and others sought to justify the ISS on grounds that it would further the United States' space leadership (and hence contribute to prestige), the reality of a tight fiscal environment necessitated significant budget cuts be made to the National Air and Space

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[181] Lieutenant Colonel Gregory M. Billman, "The 'Space' of Aerospace Power: Why and How" (master's thesis, General Ridgway Center for International Security Studies, University of Pittsburgh, May 2000), 66.

Administration (NASA) in general and the ISS in particular. In an effort to find international funding for the ISS, the Clinton administration saw an opportunity to collaborate with Russia. While a joint venture with the Russians would realize the immediate objective of placing a space station in orbit, it also afforded the prospect of securing significant long-term diplomatic objectives.

The ulterior objectives behind the ISS partnership with Russia were threefold. First, substantial cooperation with the Russians fulfilled the long-professed vision of both countries that space was a medium that should foster international collaboration. While this vision was largely unfilled during the Cold War (with the primary exception of the 1975 Apollo-Soyuz mission),[183] ISS cooperation indicated to the world that the Cold War was truly over and a new global structure had taken root.[184] Second, "the International Space Station [was] a diplomatic tool to keep other potential space competitors engaged in a project led by the United States, and especially to keep Russia's aerospace industry tilted westwards."[185] By monopolizing a significant portion of Russia's space infrastructure, the United States "succeeded in creating an international space research and development effort which is channeled in directions advantageous to the United States. [The ISS partnership] has also been a diplomatic success, in that each of the partner nations has come to regard its role in the overall project, and its relationship with the United States, as more important than any other potential role with other players on other projects beyond the oversight of the United States."[186] Third, and most importantly for immediate American diplomatic objectives, the United States successfully linked the ISS technology partnership to Russia's willingness to join the Missile Technology Control Regime (MTCR). According to Matthew J. Von Bencke, the United States used access to its own satellite launch market, "along with the promise of Shuttle-Mir and space station cooperation, to resolve one of its major concerns about Russia and Ukraine: proliferation. When Vice President Gore and Prime Minister Chernomyrdin agreed in September 1993 to merge the two countries' space station efforts, they also signed a bilateral agreement whereby Russian [sic]

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[182] Blechman and Kaplan, 74.
[183] Von Bencke, 79-89.
[184] Ibid., 108; "It was in this highly charged environment that Clinton chose the joint space station as cooperation aimed at supporting Russia's fledgling democracy and intimately associated with the larger currents of overall U.S.-Russian relations."
[185] Oberg, 6.
[186] Ibid., 106.

promised to adhere to the Missile Technology Control Regime."[187]

While the ISS offers a useful case study in understanding how technology partnerships have been used to influence Russian behavior, the ISS and Space Shuttle have also been used to shape the behavior of American allies such as Canada, Japan, and the European Space Agency. Canada's contribution of its Robotic Arm to both projects, the Japanese Experimental Module, and the European Space Lab flown on Shuttle missions are all efforts at lowering the cost of space exploration for the American taxpayer while supporting the space ambitions of American allies. Through such partnerships, trade, technological, and military relationships are strengthened, while also increasing the interdependency of these states on the American space effort.

Space technology partnerships offer a powerful inducement to promote or dissuade nations from specific behaviors. By offering other states the opportunity to more easily access space, and thereby receive the concomitant prestige associated with space programs, or to partner with other spacefaring states to lower the cost of a specific space function, the United States can achieve both economic savings in its space programs and shape the behavior of other states.

Access to Space Services

The third aspect of space assets' inherent diplomatic power is the ability to provide no-cost, or low-cost, access to space services to states who do not otherwise have access to such services. Similar to technology partnerships in that access to space services is a form of constructive coercion through persuasive influence, three factors make this component distinct. First, rather than collaborate with another state toward some common goal, access to space services resembles traditional foreign aid in that the country granting the access to its space services does not expect a significant monetary or technological payback for the services it provides. Second, providing access to space services does not require the state receiving the services to be industrially or technologically advanced. In fact, some of the best opportunities for achieving diplomatic leverage in this area may very well be among third world states. The third unique factor of access to space services is that it offers the opportunity to achieve diplomatic advantage in a quicker timeframe than technology partnerships. Since providing access to space services can theoretically occur very quickly, depending on the training and

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[187] Von Bencke, 178.

hardware that must be provided to the target state, diplomatic effects can be readily realized.

The types of space services the United States could offer to other states to induce desirable behavior, or to stop undesirable behavior, fall into two broad categories. First, space assets offer the opportunity to provide basic services to poor and developing countries that they cannot afford if they must perform those services terrestrially or develop them indigenously. For example, the costs for a developing state to build the infrastructure required for a modern terrestrial telecommunications network are tremendous—so significant in fact that radio-wave communications are effectively denied to some impoverished states.[188] Instead of following the historic model of installing a terrestrial network first, space assets offer a different—and potentially much less expensive—development path that *starts* with spaceborne telecommunications services as the backbone of a national system. Other space services that fall into this basic category are meteorological and environmental monitoring, navigation, and multi-spectral imaging. Offering less developed states the opportunity to access such space-provided services offers increased quality of life (e.g., through increased agricultural efficiency, improved weather forecasting, etc…), better utilization of natural resources (to include environmental protection), and avoidance of unnecessary costs.

The second category of access to space services concerns high-end services such as high-resolution imagery, missile warning data, advanced communications, and launch services. Focused more toward technologically sophisticated states, those with advanced elements within their economies, providing high-end space services can be an inducement as it allows access to services that are currently beyond their means. For example, providing missile warning data (along with Patriot missile batteries and crews, and an intense air interdiction effort) to Israel during the Persian Gulf War led directly to achieving the United States' diplomatic objective of persuading Israel not to retaliate militarily against Iraq. Israeli retaliation could have severely fractured the American-led coalition, and the use of military assets (space, air, and ground) in this diplomatic capacity was one of the most important strategic operations of the entire conflict.

The Space-Diplomacy model argues that access to space services is an effective diplomatic tool throughout the spectrum of conflict. In peacetime, the United States can

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[188] Lambakis, 14.

provide access to space services to encourage desired behaviors from other states. In addition, providing access to space services maintains the United States' leadership position in space by dissuading other states from building competing systems to those operated by the United States and provided for their access. An interesting example is the fact that no viable system has arisen to compete with the United States' Global Positioning System (GPS). Although European allies have expressed reservations that the GPS system cannot be relied on for their civil purposes since the American military controls it, and hence could degrade or deny the signal in some future crisis, they have been unable to bring together the political and financial resources to field their own systems. According to René Oosterlinck, head of the navigation department at the European Space Agency, "Europe cannot accept reliance on a military system which has the possibility of being cut off."[189] While the latest indications are that the Europeans will go forward with their Galileo navigation constellation, there is doubt whether they will actually see the project through to fruition since the United States provides its GPS signal free to the entire planet.[190] During periods of crisis response, the United States can provide access to space services (such as imagery) that would stabilize a situation, reassure an ally, or prevent escalation. Finally, during war, the United States can achieve diplomatic objectives by providing vital space services (such as missile warning) to coalition partners to take, or avoid taking, actions that directly bear on the war's outcome.

Legal Precedent

The fourth component of space assets' diplomatic power is the legal precedent they establish or reinforce. As a medium beyond the reach of humanity until 1957, the body of international law that governs conduct in space is much less mature than the law governing air, land, and sea. As such, when states use space assets in ways not addressed by existing space law, those space assets establish precedents—precedents that may become international law either through formal codification or by becoming an accepted practice of the international

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189 Jennifer Lee, "Europe Plans To Compete With U.S. Satellite Network," *New York Times*, 26 November 2001.

190 Joseph Fitchett, "France Edges Closer to U.S. on Defense," *International Herald Tribune*, 31 January 2002, n.p., on-line, Internet, 23 April 2002, available from http://www.iht.com/articles/46498.html. French Defense Minister Alain Richard said he saw no compelling military reason for proceeding with Galileo since France trusted American stewardship of the GPS system.

community.[191] Using either method, however, legal precedent can be a coercive, if unconventional, form of diplomatic power. Although theorists do not traditionally consider legal precedent a type of coercion, it can be used to change or restrain the behavior of other states.

One aspect of legal precedent's ability to alter the behavior of other states is the fact that compliance is ultimately voluntary in the international system. With no sovereign authority higher than the state able to enforce conformity to international law, except other states in the system, states can choose whether they want to comply. Although this creates a cautionary note regarding legal precedent's ability to coerce, it is similar to more traditional forms of coercion in that the acquiescence of one state to another always requires the willingness of the coerced state to conform to the desires of the coercer. Further, just as conventional coercion seeks to change the behavior of a state by demonstrating that its future situation will be worse (due to the future pain the coercing state will inflict or due to the coercer's ability to devastate the target state's military strategy) than if that state conformed to the coercer's demand, so too legal precedent, to be effective, requires states and international bodies willing and able to monitor the behavior of spacefaring states and impose costs if required.[192]

One distinguishing factor of using legal precedent to modify the behavior of other states is that legal precedent applies to the coercing state as well as the coerced. To have credibility in the international system, all states, including hegemonic ones like the United States that are best able to monitor the behavior of others, should abide by international law and legal precedents. Thus, the United States must carefully consider what legal precedents it wants to establish since those precedents will apply equally to it as well as other states.

An example of how space assets can be used to establish legal precedents that in turn shape the behavior of all states (including the state initiating the precedent) was noted earlier—

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[191]Article 38 of the Statute of the International Court of Justice defines international law as: International conventions (i.e., treaties), international customs as evidence of a general practice accepted as law, the general principles of law accepted by civilized states, and the judicial decisions and teachings of the most highly qualified jurists.

[192] Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996), 12-54. According to Pape, the two traditional forms of coercion are punishment (i.e., coercion occurs due to the threat of future costs the coercer will impose) and denial (i.e., coercion occurs due to the coercer making the coerced state's military strategy untenable). He also describes decapitation (i.e., coercion occurs due to the coercer destroying a small collection of the coerced state's leadership targets—decapitation blends denial and punishment effects) as a new strategy of coercion.

the launch of Sputnik and freedom of navigation in space. By being the first to orbit a manmade object in space, the Soviet Union ceded to the United States the opportunity to establish a precedent that allowed the space vehicles of one nation to orbit over the territory of other states. Unlike airspace which international law considers part of the sovereign territory of a state, the precedent of Sputnik was that space was somehow different (more akin to international waters). Specifically, Sputnik allowed the United States to adopt the principle of freedom of navigation in space—a principle it would exploit through its reconnaissance satellite programs. Interestingly, in 1959, the Soviet Union began protesting the United States' intended use of space for reconnaissance purposes.[193] While the Soviets would continue to argue that using space for "spying" was illegal (a practice they would engage in while they denounced it), the precedent that Sputnik established restrained them from taking any action beyond merely condemning it. Further, the global community later codified the precedent of freedom of navigation in space into international law,[194] as it did the concept of reconnaissance from space. In the Anti-Ballistic Missile (ABM) and SALT treaties, the United States and Soviet Union agreed that national means of verification (i.e., space assets) would be the primary means of treaty verification, and they agreed not to interfere with each other's reconnaissance satellites.

The current state of international space law is incomplete. While the precedents established during the early space age helped to define the direction of space law, gaps still exist. An important area that space law does not address in totality is the weaponization of space. While international treaties prohibit weapons of mass destruction (WMD) in space, and the soon to be scrapped ABM treaty prevented the placement of ABM systems in space, no agreement expressly prohibits states from placing weapons for defensive purposes (other than WMDs and ABMs) in space.[195] In fact, the militarization of space that has occurred throughout the space age may have already established the precedent that the use of space for any military purpose

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[193] Von Bencke, 45.

[194] Article I of the 1967 Outer Space Treaty states "Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States…and there shall be free access to all areas of celestial bodies." Further, Article II states "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."

[195] Linda D. Kozaryn, "Green Light Ahead for Missile Defense Program," 22 Mar 2002, n.p., on-line, Internet, 27 March 2002, available from http://www.defenselink.mil/news/Mar2002/n03222002_200203224.html. In December

(except those explicitly prohibited by existing treaties) is an accepted practice of civilized nations. With the growing reliance of the American military on space systems, to include using them for the targeting and guidance of munitions, the *de jure* legal precedent for using weapons in or from space may already be recognized *de facto*. Without an unambiguous declaration, codified in international law, that prohibits the use of any weapon in or from space, states will be free to weaponize space if they find that doing so furthers their interests.

Legal precedent is a form of space assets' diplomatic power that can also be effective across the spectrum of conflict—although with diminished capacity during war. In peacetime, legal precedent establishes the framework within which states operate in space. For example, the very fact that the early space race between the United States and the Soviet Union was so closely tied to military operations has created a situation in which the use of space for military purposes is now widely accepted by individual states and international organizations. As such, states are free to use space systems to perform military functions. These same states, however, are restrained from taking action against other nations' military satellites (since legal precedent, later codified into international treaties, allows all states to use space for defensive purposes), unless they are willing to risk committing an act of war. In crises and war, legal precedents can also shape the behavior of states, but the benefits begin to shift during war from diplomatic advantage to military advantage. For example, international law restrains states from placing weapons of mass destruction in space to threaten or use against other states. This restraint, while ultimately relying on the good faith of individual states in abiding by it, limits the possible escalation during crises and war just as conventions against chemical weapons have done in some terrestrial conflicts.

Objective Information

The fifth component of space assets' diplomatic power is objective information. Of all the components of space assets' diplomatic power, objective information has made the most significant impact on diplomacy to date.[196] The ability of space systems to record highly accurate and impartial information (i.e., photographic imagery, multi-spectral imagery, signals intelligence, infrared signatures, radar returns, or environmental information) on terrestrial

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2001, the United States invoked the ABM treaty's "opt out" clause and notified Russia that it would pull out of the treaty in 6 months. On 14 June 2002, the ABM treaty will no longer bind the US.

locations in four dimensions (height, width, length, and time) provides states unprecedented awareness and diplomatic leverage.[197] Among the attributes of space assets that contribute to this facet of diplomatic power are field of view (satellites can collect information on very large tracts of the Earth at any instant), access to denied areas (international law allows satellites to orbit over any state), rapid revisit capability (depending on orbit geometry), and persistence (once again, depending on orbit geometry). While airbreathing collection platforms offer some of the same attributes, space-based vehicles maximize all these attributes and offer a unique tool of diplomacy.[198] Additionally, objective information is the first component of space assets' diplomatic power that can be coercive in the traditional sense. Further, as described in the Space-Diplomacy model, objective information is effective during peacetime and crisis response, with a diminished ability to influence during war.[199]

For this study, coercion is defined as the imposition of the coercer's will on the target state such that the target changes its behavior consistent with the desires of the coercer—and the coercer achieves this result without the cost of an overwhelming military victory. Coercion can be either positive or negative, that is, the target state must either take a specific action (positive) or refrain from a specific action (negative). It can also be relatively cooperative or benevolent, in that positive inducements are offered to affect the behavior of another state. In the traditional sense, however, coercion is normally thought of as intimidating. The coercer applies pressure to the target state intent on forcing it to change its behavior to avoid some additional cost (a cost that can be diplomatic, economic, or military). Further, the arguments of Thomas C. Schelling, Robert A. Pape, and Wallace J. Thies that coercion is hard must be acknowledged—and coercion may not succeed even when conditions are most favorable for its success.[200] Nonetheless, coercion attempts are far less costly than war, and represent an attempt

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[196] Lambakis, 55.

[197] Dino A. Brugioni, *Eyeball to Eyeball* (New York: Random House, 1990), 12-13. As stated by the Killian Commission during the Eisenhower administration, "A number of unique proprieties can be attributed to aerial photography…it captures and freezes an instant in time."

[198] Ibid., 53. Brugioni states, "On [the] first successful photographic satellite mission, carrying a twenty-pound roll of film, [the US] gained more than 1 million square miles of coverage on the Soviet Union—more coverage in one capsule than the combined four years of U-2 coverage."

[199] Objective information could be useful in war as well, though in extremely limited–usually end-game–scenarios. Examples such as convincing a defeated opponent not to hold out to the last man, are logically more descriptive of crisis response activities, a subtle distinction to be sure.

[200] Thomas C. Schelling, *Arms and Influence* (New Haven, Conn.: Yale University Press, 1966). Robert A. Pape, *Bombing to Win: Air Power and Coercion in War* (Ithaca, N.Y.: Cornell University Press, 1996). Wallace J. Thies,

to limit or mitigate potential violence or economic loss short of war and beyond the option of doing nothing.

Space assets provide the ability to coerce, among other means, via the release of objective information to the international community. As the aftermath of the EP-3 collision off Hainan Island in April 2001 demonstrates (see discussion in Chapter 1), states closely control, and even obfuscate, information to achieve diplomatic leverage on the global stage. By offering the ability to cut through this disinformation, or provide information where none is otherwise obtainable, space assets allow states to achieve diplomatic effects such as those garnered by the United States during the Cuban Missile Crisis (following the release of U-2 imagery showing the deployment of Soviet missiles on Cuba.) By releasing objective information on other states, the coercing state makes the actions of the target state transparent and in so doing offers the international community a more secure foundation for acting. As stated by Lambakis, "images are useful tools of persuasion and political manipulation."[201] It is not just for its own advantage that the United States can release objective information. It can be extremely valuable in the mediation of third party disputes. Accurate information symmetrically available to both sides can increase trust, and facilitate negotiation and agreement. Unfortunately, the United States has traditionally been reluctant to release objective data for fear of compromising the sources and methods used to collect such data (see Chapter 5 for a discussion of balancing the public release of space-provided objective information with the need to protect sources and methods).

Apart from coercion through the public release of objective information, space-provided objective information also affords a state diplomatic power by allowing it to know the capabilities of other states and anticipate their future actions. This function of space assets, commonly referred to as intelligence, surveillance, and reconnaissance (ISR), is distinguished by the fact that the objective information stays within the government gathering the information (or at least within a close circle of allies). By acting on this information, a state can better position itself diplomatically, militarily, and economically relative to the state upon which it collected information. President Johnson aptly expressed the power of this kind of objective information when describing the value of the CORONA reconnaissance satellite program: "I wouldn't want

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When Governments Collide: Coercion and Diplomacy in the Vietnam Conflict, 1964-1968 (Berkeley, Calif.: University of California Press, 1980).

[201] Lambakis, 56.

to be quoted on this…but we've spent a billion dollars on the space program. And if nothing else had come out of it except the knowledge we've gained from space photography, it would be worth 10 times what the whole program has cost. Because tonight we know how many missiles the enemy has and, it turned out, our guesses were way off. We were doing things we didn't need to do. We were building things we didn't need to build. We were harboring fears we didn't need to harbor."[202] Indeed, "Satellite surveillance gave the United States confidence to negotiate nuclear-arms-limitation treaties with the Soviet Union in the 1970s because of the ability to watch Soviet weapons production."[203] Trust is unnecessary when verification is certain.

An example of how the United States used objective information to inform itself and key allies of the capabilities and intentions of another state came shortly after Iraq invaded Kuwait in August 1990. Knowing that the United States could only effectively respond to the Iraqi invasion if it were invited to deploy forces into Saudi Arabia, Secretary of Defense Dick Cheney, United States Central Command Commander General Norman Schwarzkopf, and a group of high-ranking Americans met with King Fahd. During the meeting, General Schwarzkopf used satellite imagery to show the King that Iraq had some of its best units arrayed along, and inside, the border with Saudi Arabia in a position Schwarzkopf termed a strategic pause—a tactic noted during the Iran-Iraq war in which Iraqi forces halted to rearm, resupply, and then continue offensive operations. Based in part on the objective information provided by space systems, King Fahd shocked the American delegation by quickly approving the deployment of American forces, despite some hesitation by his advisors.[204] Although it is not now known if Iraq actually had intended to invade Saudi Arabia, the early deployment of American forces, secured in part by the contribution of space-provided objective information, prevented allied forces from possibly having to fight their way into the theater of operations as Iraq sent its tanks across the border.

While objective information can achieve diplomatic effects through both coercion and ISR, the Space-Diplomacy model shows that the former is most likely to be effective during peacetime and crisis response, with a reduced capacity to influence during war. ISR value

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[202] Dickson, 213.
[203] Ibid., 214.

extends throughout the conflict spectrum, but its utility shifts from diplomatic advantage to military advantage during war. During peacetime, objective information from space assets allows the United States to properly prepare for threats posed by other states. States can also use objective information from space assets in peacetime to coerce other states. For example, Landsat and SPOT (Satellite Pour l'Observation de la Terre) photos released to the international community, forced the Soviet Union to acknowledge, after initial denials, that its Krasnoyarsk early warning radar was indeed part a national ABM system, in violation of the Anti-Ballistic Missile Treaty.[205] In a similar fashion, SPOT photos, along with Swedish environmental sensing equipment, forced the Soviets to admit to their Chernobyl disaster.[206] During crisis response, space assets give the United States and others the opportunity to stabilize or diffuse a situation by exposing the actions of aggressive states and coercing them through international opinion and diplomatic pressure. As explained by Bhupendra Jasani and Toshibomi Sakata, "The advantages of satellite data are clear. If satellite monitoring can provide up to the minute, even instantaneous, reports on the development of a conflict it is, in theory, but a short step to using this information as an aid to its peaceful resolution."[207] Although this type of coercion will not always work, it is difficult for the international community to overlook objective information provided from space assets, especially when that information reveals actions that run counter to international norms. The distribution of objective information to all parties is less likely to be effective in wartime, however, since a state engaged in war has already demonstrated a willingness to fight. In such a situation, it is unlikely that the further marshaling of world opinion against them will result in their coercion. Objective information can, however, help to "win the peace" during the final stages of war by identifying where war crimes are being committed, what the humanitarian needs of the populace will be, and identifying remaining threats to friendly troops—all actions that also can contribute to coalition unity after hostilities cease.

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[204] General H. Norman Schwarzkopf and Peter Petre, *It Doesn't Take a Hero* (Washington, D.C.: Linda Grey Bantam Books, 1992).
[205] Lambakis, 58.
[206] Bhupendra Jasani and Toshibomi Sakata, eds., *Satellites for Arms Control and Crisis Monitoring* (Oxford: Oxford University Press, 1987), 21-22.
[207] Ibid., 46.

Presence

The sixth component of space assets' diplomatic power is the ability to shape behavior and exert influence through presence. As defined in the Joint Doctrine Encyclopedia, "Forward presence activities demonstrate our commitment, lend credibility to our alliances, enhance regional stability, and provide a crisis response capability while promoting United States influence and access."[208] Put another way, presence is the proximity of space assets to a location, such that international actors change their behavior or are deterred based solely on the location of space assets. The ability to influence other states due to the presence of space assets, or any military force, is based on the impact of those forces on other states' decision making, not on the distance of our forces to a given geographic location, nor on the ability of other states to physically see our forces.[209] Although the joint definition does not include space assets, it is clear that space assets can achieve some of the same effects as forward deployed terrestrial forces—although the fact that space assets cannot physically punish another state, a capability possessed by terrestrial forces, is an important distinction. To be sure, the ability to punish with terrestrial forces may have a stronger impact on an adversary's decision calculus, but this does not preclude the ability of space assets to also affect that decision calculus through their presence. Space assets do provide some advantages over terrestrial forces, however, such as their tremendous field of view which allows them to exert presence over a wider area than terrestrial forces.

Closely related to the ability of space assets to exert presence is their ability to obtain objective information (discussed previously). What distinguishes presence is that no data need be collected to shape the behavior of others. When other states are concerned about the ability of space assets to obtain information on their activities and adjust their actions accordingly,

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[208] *Joint Doctrine Encyclopedia*, 515.

[209] For an insightful, in-depth treatment of space forces exerting presence, see Billman, 68. "The first requirement for presence is that the medium from which military forces operate must be within operational range of an adversary's vital interests. A second requirement for presence is that the force must have the ability to physically access specific targets given its resources. The force must be able to 'see' or 'effect' the appropriate part of the adversary's system to elicit the desired reaction from the adversary. Said another way, not only must force be in operational proximity, but also it must be able to physically affect the adversary with proper resources. A third requirement is the ability for military force to remain in proper position to affect the adversary—it must be sustainable. Logistics considerations, fuel requirements, human endurance, and political concerns are but a few limiting factors. In short, the force must be sustainable in such a position to affect the adversary in order to be truly 'present.'"

space assets have exerted presence regardless of whether information is actually collected. Major M. V. Smith offered an example of space assets exerting this type of influence:

> "On 11 May 1998, India surprised the world by detonating nuclear test devices…Indian officials later revealed that they managed to conceal the tests from United States satellites by conducting nuclear tests 'when sandstorms normally swept across the Thar Desert and intense heat could disrupt surveillance sensors. Activity was also timed around the flights of spy satellites.'…the presence of surveillance and reconnaissance satellites did coerce India into changing the pattern of its behavior. The threat of satellite detection compelled them to work around the gaps in satellite coverage. This begs the question, if the United States had persistent coverage of India with spy satellites, would this have deterred India from taking actions leading to its joining the league of nuclear nations?"[210]

The attributes that give space assets a unique ability to exert influence through presence have already been stated, but bear further description. First, the global view of space assets allows them not only to influence any location on the earth, but it also allows any single satellite to influence multiple locations that may be separated by hundreds or thousands of miles. Second, the rapid revisit rate of space assets means that any place on the globe is repeatedly subject to the presence of space assets. Unfortunately, for space assets in low earth orbit, such as some ISR satellites, there are gaps in coverage (as mentioned above regarding the Indian nuclear tests). Thus, while locations between roughly +/- 60° latitude are constantly subject to the presence of geostationary satellites, there are times when important low earth orbiting constellations are not in view of a given location.[211] By properly designing the geometry of orbits, however, "Satellites may be used to demonstrate national awareness of a particular threat…A satellite's orbit, in other words, could send signals to a targeted country and indicate which countries the United States considers to be enemies and which to be friends."[212]

The third characteristic of space assets that contribute to their ability to exert presence is

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[210] Major M. V. Smith, "Ten Propositions Regarding Spacepower" (master's thesis, School of Advanced Airpower Studies, June 2001), 55.

[211] See "US to Boost Reconnaissance with Powerful New Birds," 15 Feb 02, n.p., on-line, Internet, 17 March 2002, available from http://www.spacedaily.com/news/milspace-02f.html. Under Secretary of the Air Force Peter Teets has tasked the National Reconnaissance Office with "finding better ways to get "persistent" coverage and collection over targets and areas." Further, "there is a need for more satellites in stationary orbit and to develop new technologies that can collect capabilities at high altitudes." Finally, Teets said, "You'd like to have more long dwell and have focused view on hot spots."

their non-intrusiveness. While the advocates of aircraft carriers rightly describe the carrier's ability to move directly offshore during a crisis, there are clearly situations in which the placement of a significant military force, such as a carrier battle group, near the area will upgrade a "situation" to a crisis. For example, while sailing carriers through the Straits of Taiwan has contributed to diffusing crises in the past, the inflammatory nature of placing such forces immediately off the coast of China may make such a move too risky in future scenarios. "Forward presence can be a trap when it provides proximity to a situation where intervention might not be in the United States' best interest."[213] Related to space assets' non-intrusiveness, the fourth aspect of space assets that contributes to presence is their legal authority to orbit over any country. By being able to exert presence over traditionally denied areas, space assets have the ability to influence areas that terrestrial forces cannot.

The final aspect of American military space systems that enhances their ability to influence events through presence is their linkage to the United States' global strike complex. While the ability to threaten punishment is discussed later in this chapter, the fact that other states know that American satellites are a vital component of the United States' capacity to attack any point on the globe further contributes to their desire to avoid detection by American space systems. Although United States' space assets do not currently possess the capability to employ weapons directly, they are linked to a tremendous capability that can hold any location at risk within days.

For space assets to truly exploit their presence and influence upon states, the United States must demonstrate a willingness to use its space presence to some end (e.g., release objective information about other states' questionable behavior or enable a terrestrial attack to punish a state for aggressive behavior in violation of international law). Interestingly, as the United States purposefully and publicly uses the other components of space assets' diplomatic power to increase diplomatic advantage, the ability of American space assets to exert presence will increase. States will not be concerned about space assets if their presence does not potentially lead to some negative consequence. The choice of whether to make these consequences real lies completely with the United States. As stated by Billman, "Except for

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[212] Lambakis, 60.
[213] Lieutenant Colonel Bernard H. Fullenkamp, "Forward Presence and the Search for Peacetime Influence" (Naval War College, 16 May 1994), 14.

very few potential adversaries, most have limited to no capability to realize the existence of United States space forces in effective position. Therefore, the ability of United States space forces to project real presence is restricted to demonstrating capability; that is, supplying 'proof' to the adversary it exists and can be effective."[214]

At the crux of the issue in the debate over specifically what military forces exert effective presence is the precise definition of what actually constitutes presence. In 1995, the United States Air Force published a white paper entitled *Global Presence*. In this document, the Air Force argued that the cost of maintaining significant forward deployed forces was becoming too expensive in a shrinking budget environment. To augment the shrinking number of these forward deployed forces, the Air Force stated that space assets and forces deployed from theater could exert "virtual presence" in some situations and achieve the same results as traditional presence forces.[215] At the time of *Global Presence*'s publication, the United States Navy had already adopted presence as the mission driving its peacetime force structure. As such, and because professional naval officers truly believed forward deployed naval forces were the United States' best tool for exerting presence, the Navy reacted strongly to the Air Force's suggestions. Using a phrase that would become a mantra, Navy leaders and supporters frequently repeated, "virtual presence is actual absence."[216] Apparently, the Navy's efforts were successful, for the most recent Air Force vision statement makes no mention of the presence mission.[217] Unfortunately, the entire debate missed the point.

Most importantly, space assets do *not* exert *virtual* presence—space assets are *actually*

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[214] Billman, 75.

[215] Secretary of the Air Force Sheila E. Widnall and Chief of Staff of the Air Force General Ronald R. Fogleman, "Global Presence," *Joint Forces Quarterly*, Spring 1995, 95. "To use an analogy, during the Cold War, America was like a cop permanently guarding the door of every bank around the globe. Changes in the security environment coupled with technological improvements and force reductions altered America's need to continue in this role. Hence, America replaced 'the cop on the beat' with 'video monitoring and alarm systems' linked to joint military capabilities that can be brought to bear wherever and whenever necessary. This monitor and alarm network consists of space-based and air-breathing platform sensors and other information-gathering systems. In most instances, information combined with forces that can rapidly respond with the right mix of capabilities can achieve US goals. On occasion, information alone may be enough to attain US objectives. Of course, in some regions of the world a physical presence is imperative; however, there may be circumstances when such a presence is counterproductive. In instances where a physical presence is not preferred, information capabilities provide America the option to visit the 'bank' as often as it wishes to check the integrity of the system."

[216] For example, see RADM J. Michael "Carlos" Johnson, "When Virtual Presence Equals Actual Absence," *The Hook: Journal of Carrier Aviation*, Spring 1998.

[217] Department of the Air Force, *Vision 2020: Global Vigilance, Reach, & Power* (Washington, D.C.: Government Printing Office, 2001).

present over any location on the globe, even if that presence is from an extended distance. *Immediate* proximity to a location is not the prerequisite for exerting presence, a point to which even the Navy must concur. As explained by Billman, "A carrier battle group visibly off the shores of an adversary is real presence, as is a tank platoon positioned to strike on a battlefield, or a four ship of F-15Es flying a 'Southern Watch' sortie over southern Iraq, or a constellation of on-orbit, multi-functional satellites that the adversary knows is there."[218] A better phrase for describing the presence of space assets is "extended presence." With the advent of advanced sensors and rapid communication techniques, the ability of space assets to instantaneously detect and report on activity anywhere on the globe makes the actual distance from a satellite to a given state immaterial in determining the impact it can have on that states' decision making. In almost every case of the Navy's exertion of presence, the carriers or ships that influence the terrestrial situation are far from the shores of the target, and out of sight of the enemy. The "actual" presence of the Navy in recent Afghanistan operations was achieved despite that nation's geographic position as a land-locked state. As stated by Lambakis, "Space assets are usually not visible to the naked eye, yet friends and foe alike are aware of their presence."[219] The fact that the Navy vigorously defends its role in the presence mission does not take away from the ability of space assets to influence through presence. While the presence of space assets is not now a substitute for the presence exerted by terrestrial forces, it does have a role in its own right—a role that is complementary to the presence exerted by terrestrial forces.

In the Space-Diplomacy model, the presence of space assets is most effective during peacetime and crisis response. As described in the Indian nuclear testing scenario, states (including American allies) react to the presence of United States' space assets in peacetime and adjust their behavior accordingly. In crises, the ability to place a problem state on notice that the world community is watching it offers the potential to change that state's behavior. If the United States and its allies are willing to back up diplomacy with action, the presence of space assets can have a significant deterrent effect.

Threat of Punishment

The final component of space assets' diplomatic power—not yet realized—is the ability to

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[218] Billman, 74.
[219] Lambakis, 79.

coerce behavior by threatening to directly punish international actors if they do not conform to a set of demands. While this is a highly provocative form of diplomacy that some may find distasteful, the United States has used threat of punishment on many occasion to try to influence the behavior of international actors. Following the 11 September 2001 attacks on the World Trade Center, the United States threatened to replace the Taliban regime in Afghanistan if they did not turn over Osama bin Laden and dismantle the al Qaeda terrorist network.[220] While the Taliban chose not to comply with the American demands, because they did not understand the ability of American air (ground and carrierbased), space, and special operations assets to project power from so far away, the fact remains that the United States attempted to influence another state by threatening to punish it. Just as forward deployed naval forces are able to threaten offensive action against a state if it does not comply with the given demands, space assets may be able one day to threaten direct military action and thus be used to coerce other states' behavior short of actual combat. To be able to *directly* threaten other states using space assets, however, will require the weaponization of space. Although I have focused this study predominantly on the United States' existing space force structure, to explore the diplomatic potential of space assets I need to briefly discuss the possibility of weapons in space.

If the United States ever decides to place weapons in space for attacking locations on the Earth, or for attacking other space systems, it will possess the ability to influence other states by the threat of punishment throughout the spectrum of conflict. While coercion is always hard, the ability to modify the behavior of other states in peacetime using space assets would allow the United States to exert its direct influence on a global scale (even beyond that which it enjoys today). Additionally, during crises, the ability to threaten punishment from space potentially reduces the United States' response time by an order of magnitude. As such, when

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[220] President George W. Bush, speech to Congress, Washington D.C., 20 September 2001, n.p., on-line, Internet, 23 April 2002, available from http://www.whitehouse.gov/news/releases/2001/09/20010920-8.html; "The United States of America makes the following demands on the Taliban: Deliver to United States authorities all the leaders of al Qaeda who hide in your land. Release all foreign nationals, including American citizens, you have unjustly imprisoned. Protect foreign journalists, diplomats and aid workers in your country. Close immediately and permanently every terrorist training camp in Afghanistan, and hand over every terrorist, and every person in their support structure, to appropriate authorities. Give the United States full access to terrorist training camps, so we can make sure they are no longer operating. These demands are not open to negotiation or discussion. Taliban must act, and act immediately. They will hand over the terrorists, or they will share in their fate."

the United States seeks to coerce another state to comply with a given set of demands, the hope that state has of finding a way to thwart the United States' actions is greatly reduced when they know that the United States can respond in minutes rather than days or weeks. Finally, during war, the United States could use a future space weapons system as a way to prevent other states from attacking American space systems. By demonstrating the capability to decisively engage targets from space, the United States could hold this power in reserve as a means of preventing future adversaries from using their own space weapons.

Although the United States currently does not field space weapons, and thus cannot directly threaten military action with its space assets, it does possess a unique ability to use its space forces to enable military attack. Unlike the space assets of other nations, American space forces can detect the need for military action, report that need to competent authorities, provide responding terrestrial forces with weather and geospatial information, connect responding forces to their command and control centers or supporting forces, and navigate the responding terrestrial forces in any weather condition right to the target location while helping to identify possible threats along the way. This unprecedented capability is possible because of the distinctive advantages offered by space assets, and because no other combination of terrestrial systems can produce the same results in a timely manner. In fact, this capability, when mated with stealth aircraft and PGMs, greatly blurs the line on whether the United States has already weaponized space. While the academic distinction between the militarization and weaponization of space is in this way obfuscated, there is little doubt that in the real world space weapons evoke a psychological reaction that requires us to look at the potential of weapons in space. As stated by Colin Gray, "the notion that weapons in space would be regarded differently from weapons on land, at sea, or in the air is a political reality that has the practical effect of inhibiting study of and experimentation with space based weapons. It is a fact of long duration that the idea of space 'weaponization' arouses unusual political opposition."[221]

As the state most able to place weapons in space, some argue that the United States runs a risk of doing great diplomatic (and legal) harm to itself if it chooses to put weapons in orbit. By acting unilaterally regarding weaponization, this point of view holds that any diplomatic leverage

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[221] Colin S. Gray, "The Influence of Space Power upon History," *Comparative Strategy* 15, no. 4 (1996): 302.

that can be gained by coercing other states with the threat of punishment from space is more than offset by the loss of credibility and respect the United States will suffer from the world community (including its allies) for being the first to place weapons in space. Central to this belief is the proposition that American security is increasingly dependent on global structures and institutions—the "go it alone" defense policies of the past will not guarantee future security—in fact, those policies will only endanger American security in an increasingly globalized world. Further, some also argue that as the leading space power, and as the state most dependent on services provided from space, the United States has the most to lose from initiating the weaponization of space.[222]

Opponents of space weaponization have capably articulated their views. Until such time as the world community joins together to codify a verifiable and enforceable prohibition against weapons in space, however, the United States would be foolhardy not to continue planning for the placement of weapons in orbit—provided those weapons serve militarily required missions. For the proponents of space weaponization, the advantages offered by space assets (field of view, access to denied areas, revisit rate, dominant energy position, etc…) offer possibilities for directly attacking any location on the globe in minutes. This potential, if brought to fruition, would give the United States the ability to shape behavior by threatening punishment.

Whether the United States should place weapons in space is ultimately a policy decision for the Congress and the President to make as an expression of the will of the American people. While the advantages and disadvantages of doing so will surely be debated by the American people with great intensity, it is possible that the structural framework surrounding the issue will drive the decision irrespective of the policy issues. Although this structural framework has many aspects, the imperative to influence other states from space (due to space assets' inherent advantages and the anarchic nature of the global community in which states seek to exercise influence over one another) is a natural draw pulling the development and fielding of space weapons. As reflected in the Space-Diplomacy model, the inability to currently threaten punishment directly from space is a vacuum pointing to the unfulfilled potential of space as a medium for human endeavor. Just as land, sea, and air have each been exploited as mediums

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[222] For two excellent treatments of the problems posed by space weaponization, see Major William L. Spacy II, "Does the United States Need Space-based Weapons?" (master's thesis, School of Advanced Airpower Studies,

through which mankind expresses its full range of political discourse (from peaceful to violent), the inability to use space to achieve political goals by force of arms (or the threat thereof) must be addressed before humankind will be able to truly embrace the space age's promise of space as the next "new world" for discovery and development.

Conclusion

Space assets offer unique diplomatic advantages. From peacetime through war, the United States can use the varied components of space assets' diplomatic power directly to improve its diplomatic, economic, and military position. Except for the direct threat of punishment, the United States' current space force structure offers several unique means in which to directly pursue diplomatic objectives. Unfortunately, the majority of military space doctrine and policy is not focused on such uses. Rather, the focus is on enabling terrestrial forces. The argument here is not that the military should stop seeking ways to integrate the enabling functions of space assets into the overall force, but that it cannot lose sight of space assets' inherent strategic utility as a source of diplomatic and national power. Just as land, sea, and air forces have each grown into instruments able to directly exert national power, so too will space forces eventually mature in this direction. Structurally, however, space forces will not realize their full potential until space weapons are developed and fielded or until verifiable and enforceable international agreements take the possibility of weapons off the table. Until this point, the study has focused on the theoretical possibilities, buttressed by historical examples, of how space assets can directly achieve diplomatic goals. From this theorizing, the Space-Diplomacy model was developed to explain the different facets of space assets ability to contribute directly toward the fulfillment of diplomatic goals. In the following chapter, the study translates theory into real-world suggestions of how the United States could better use its existing space forces for diplomatic advantage. While some of these suggestions build on actions already taken by the United States, the next chapter advocates ways in which space assets can be used *systematically* for diplomatic advantage.

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June 1998); and, Major David W. Ziegler, "Safe Havens: Military Strategy and Space Sanctuary Thought" (master's thesis, School of Advanced Airpower Studies, June 1997).

Chapter 5

Recommended Diplomatic Uses of Space Assets

We are entering an era -- if we have not already entered it -- when the use of space will exert such influence on human affairs that no nation can be regarded as a world power or remain a world power unless it possesses significant space capabilities.

-- General Robert T. Herres

The United States possesses the most diversified space force structure in the world. When coupled with the commercial space assets of American industry, the United States holds dominate positions in the military, civil, scientific, and commercial space sectors. While other countries and consortia, such as Russia, China, and the European Space Agency, compete in individual sectors, they are unable to individually compete across all sectors simultaneously. This dominant position enjoyed by the United States affords it diplomatic opportunities in two areas. First, due to the diversity of its space assets, the United States can leverage those assets across the spectrum of conflict to directly achieve diplomatic advantage. Because of the tremendous investments made by both American taxpayers and private industry, the United States can choose which of its space sectors to use when seeking to gain diplomatic leverage. Second, because other states' space assets are not robust across all space sectors, the United States has unique opportunities to use its space systems to achieve diplomatic effects by helping other states meet their space shortfalls.

The potential uses of space assets for diplomatic purposes are numerous. There are, however, specific uses of space assets that take advantage of the inherent diplomatic power of those assets as revealed in the Space-Diplomacy model. Using the United States' existing force structure, the following diplomatic uses of space assets offer significant opportunities to take advantage of the United States' dominant space role, and the need of other states for specific space services. The list is not all-inclusive, but it does reflect a representative list of efforts at directly achieving diplomatic objectives.

1. Public Release of Imagery. In any standoff in which the release of space-provided imagery would contribute objective information about an issue that would favor the United States' position, the basic American policy should be to release pertinent imagery. In an

environment in which high-quality imagery can be purchased from a multitude of commercial firms representing a number of different states, the classification of American intelligence imagery that falls within the capabilities of commercial systems no longer makes sense. High-resolution imagery has now become ubiquitous—it has diplomatic value and we should take advantage of it. As stated in the draft Joint space doctrine, "Another FDO [flexible deterrent option] could be to publish, in the world media, high-resolution images from commercial satellites and other systems, to clearly demonstrate the enemy's preparations for war in order to raise public awareness."[223]

In a variety of diplomatic standoffs, American allies and non-aligned states frequently demand proof, beyond the assurances of government officials, before they are willing to act or lend diplomatic support. For example, in the on-going war on terrorism, the United States has linked Iraq to the al Qaeda terrorist group. In attempting to make the linkage in order to justify possible military moves against Iraq, the United States has run into the skepticism of its allies. As quoted in the *London Daily Telegraph*, Italian Defense Minister Antonio Martino, among others, expressed his desire for proof before Italy would support action against Iraq:

> "Mr. Martino…said that if the war against terror was to be extended to other countries, and particularly to Iraq, the United States would need to provide solid evidence to persuade Italy and many other EU countries to take part. A transatlantic rift has opened up over suggestions of a United States attack on Iraq…The Americans could go its own way without Europe, Mr. Martino said, but they needed to build a broad coalition of other nations…Before Italy joined in any action, 'we should like to have some more hard evidence,' he said…America needed to provide good reasons for attacking Iraq. 'If it is based on hard evidence, it can work,' Mr. Martino said."[224]

If the United States possesses satellite imagery that helps to establish the link between al Qaeda and Iraq, it would give the United States significant diplomatic advantage to release that information. Unfortunately, "…there are no political leaders who say that broader sharing of satellite data could constitute a means of enhancing US national security and, more broadly, international security—or vice versa."[225]

To advocate for the release of satellite imagery, at least that mirroring the capabilities of

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[223] Joint Publication 3-14, *Joint Doctrine for Space Operations*, 13 April 2001 (Draft), V-2.
[224] Michael Smith, "Italy Seeks To Cut Back Tasks Of Euro-Army," *London Daily Telegraph*, 21 Feb 2002.
[225] Bhupendra Jasani and Toshibomi Sakata, eds., *Satellites for Arms Control and Crisis Monitoring* (Oxford: Oxford University Press, 1987), 117.

commercially available imagery, it is important to recognize the potential pitfalls. First, releasing imagery may divulge methods and capabilities of American reconnaissance satellites. While even this concern may be oversold due to the availability of commercial imagery, the specific recommendation is to release data only within the technical capabilities of commercially available systems. Second, the regular release of imagery runs the risk of driving other states to conceal their activities (through concealment, deception, timing events to occur when satellites are not overhead, or taking their activities underground). Although such actions could intensify, the states most concerned about American reconnaissance satellites have already been forced to account for them in their activities. Making regular imagery releases to achieve diplomatic advantage will not make those states more vulnerable to imagery collection, it will only make better use of the imagery the United States has already collected.

2. Shared Early Warning Data. One of the unique aspects of the United States' space assets is its ability to provide missile warning for launches anywhere on the planet. Although the United States originally developed this capability during the Cold War to warn of a massive Russian intercontinental ballistic missile (ICBM) attack, the system proved flexible enough during Desert Storm to be reoriented by Air Force Space Command (AFSPC) to detect tactical ballistic missiles such as the Scud. Subsequently, AFSPC has developed a system, using the existing constellation of Defense Support Program (DSP) satellites, to detect tactical ballistic missiles anywhere on the planet. The global situational awareness afforded by such a system gives the United States an unprecedented real-time picture of missile activity. Not surprisingly, this global picture is a capability desired by many of our allies. According to Lambakis, "The worldwide [missile warning] capability of the United States is not easily duplicated, and it should use this fact to improve relations with other nations and shore up alliances against those countries and entities that would do it harm."[226]

Due to the tremendous proliferation of missile technology since the end of the Cold War, the threat of ballistic missile attack has become a primary concern for many states. According to RAND, "As more nations face the potential threat of WMD-carrying missiles, the interest in their detection has also grown…there has been increasing interest in closer cooperation with the United States on missile warning…United States space capabilities provide a diplomatic

advantage that no other nation can yet match and, thus, can be both a stick and carrot for advancing United States nonproliferation and counterproliferation interests."[227] In recognition of the diplomatic leverage that sharing missile warning information can produce, the United States already shares warning data with Britain, Canada, Australia, South Korea, and Israel.[228] According to the draft Joint space doctrine, "Conducting a theater ballistic missile defense (TBMD) exercise with United States allies is one possible FDO if the CINC is facing a TBM threat."[229] Further, in an outgrowth of the Y2K warning center the United States and Russia established to ensure the millennium rollover would not inadvertently trigger each nation's warning systems, both countries have agreed to establish a permanent warning center to share warning information and build confidence between the countries.[230]

While the United States should continue to systematically make missile warning data available to individual states in return for some desired behavior, it should also look at providing this information to both India and Pakistan to help stabilize the nuclear standoff on the Asian sub-continent. According to Kenneth Waltz, nuclear weapons have the potential to bring a stable peace when they develop symmetrically as in India and Pakistan.[231] An important component to ensuring that stability is achieved, however, is that each side in such a dyad has sufficient strategic warning. By guaranteeing both sides timely missile warning data, and hence warning of the most indefensible nuclear delivery system, the United States can achieve significant diplomatic goals. As stated by RAND, "…space-based warning systems provide new options for exercising national power in a post-Cold War environment…United States leadership in [missile warning] can provide new common bonds to other countries that are threatened by proliferation, and thus can contribute to a more stable international environment for all US interests, whether military, political, or economic."[232]

3. Technology Partnerships. The complete nature of the United States' space force

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[226] Steven Lambakis, *On the Edge of Earth: The Future of American Space Power* (Lexington, Ky.: The University Press of Lexington, 2001), 285.
[227] Dana J. Johnson, Scott Pace, C. Bryan Gabbard, *Space: Emerging Options for National Power* (Santa Monica, Calif.: RAND, 1998), 39.
[228] Lambakis, pg. 52.
[229] Joint Publication 3-14, *Joint Doctrine for Space Operations*, 13 Apr 01 (Draft), pg. V-2.
[230] Lambakis, pg. 52.
[231] Scott D. Sagan and Kenneth N. Waltz, *The Spread of Nuclear Weapons: A Debate* (New York: W. W. Norton & Company, 1995), 11.
[232] Johnson, Pace, and Gabbard, 40.

structure provides opportunities for partnering with other states to provide them access to space services they cannot independently afford, while achieving diplomatic goals for the United States and possibly reducing the cost of future systems. The United States already is involved in technology partnerships with military space systems, such as the North Atlantic Treaty Organization's communication satellite constellation and the shared operation of the United Kingdom's Skynet communication satellite constellation. The United States should continue such partnerships, and look for additional opportunities to achieve diplomatic goals—opportunities that are increasing with the world's global reliance on space systems. "Examples of international cooperation may include the exchange of data and research scientists, technology development, the execution of experimental trials, co-development of a satellite system, the provision of a satellite payload by one country to be flown by another, and even the coordinated use of systems."[233]

One example of the opportunities available in technology partnerships is Saudi Arabia's request for assistance in

> "…the construction of a reconnaissance satellite. Saudi officials have presented the satellite as a civilian project meant to help the kingdom monitor its development programs and energy resources. They said Riyadh wants to place the satellite program as a priority over the next year. But industry sources said the Bush administration has not responded to the Saudi request. They said the National Aeronautics and Space Administration [NASA] has reduced its involvement in the project…The sources said the Defense Ministry has held talks to determine the future of the Saudi project. They said one prospect is to invite European satellite firms to take over the program."[234]

With the competitive nature of the satellite industry, the United States should take advantage of the Saudi request with an eye toward promoting Saudi behavior in a diplomatically useful way. Failure to assist the Saudis in this request will result in their business going to the Europeans, and a unique diplomatic lever being lost.

The United States Space Command's *Long Range Plan* lays out an excellent framework for partnership opportunities in a number of specific areas. Although the document's emphasis is primarily on achieving budgetary savings, it does discuss the diplomatic benefits of space technology partnerships. "Before activities infringe on USSPACECOM's future ability to do its

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[233] Lambakis, 51.
[234] "Saudis Seeks U.S. Aid in Satellite Capability," *Middle East News Online*, 22 February 2002, n.p., on-line, Internet, 23 April 2002, available from http://www.menewsline.com/stories/2002/february/02_22_3.html.

mission, we should try to shape the future space environment so it is advantageous to the United States and its allies. A strategy of mutual dependence, which requires all spacefaring nations to contribute and cooperate for mutual benefit, should deter aggression and foster enduring relationships."[235] Further, the *Long Range Plan* lays out a model for using technology partnerships in return for actions the United States finds favorable to the long-term development of spacepower (see Figure 2).[236] The US should pursue this plan with the utmost diligence.

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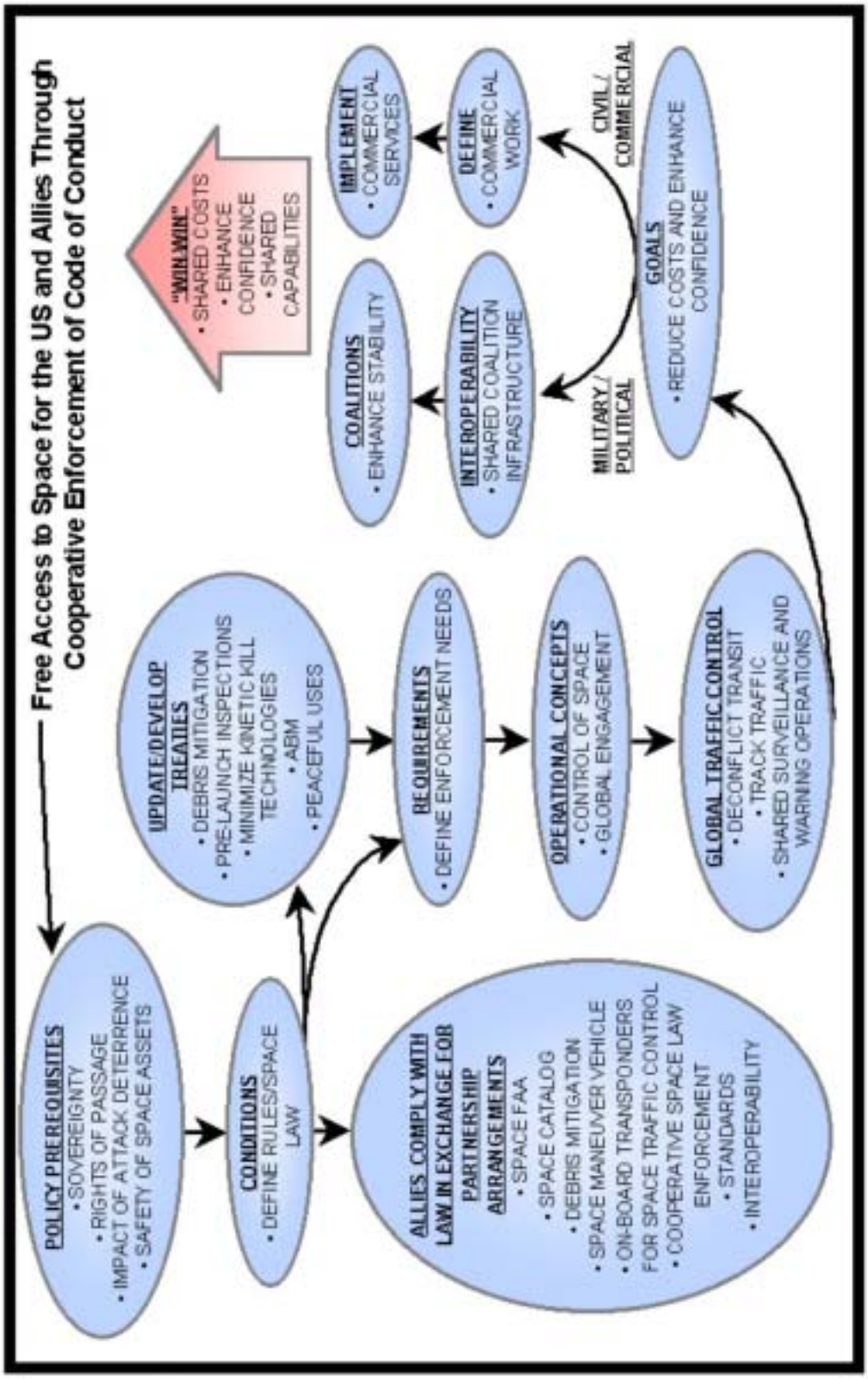
[235] United States Space Command, *Long Range Plan: Implementing USSPACECOM Vision for 2020*, March 1998, 105.
[236] Ibid.

Figure 2: Partnerships and Global Shaping



4. Access to low-cost launch services. The largest barrier to states seeking to take advantage of the benefits of space assets is the cost and technical complexity of spacelift. As stated by RAND, "…space launch…is a prerequisite for all aspects of spacepower."[237] The need for affordable spacelift by other states presents a dual situation for the United States. First, the United States has the capabilities so desired by these states. The United States can use both commercial and military spacelift systems to offer launch services to other states. In return, the United States can achieve positive diplomatic effects. Second, if the United States does not meet the need for inexpensive spacelift for friendly states desiring to place satellites in space, they will take their business to competing states, or, in a potentially more ominous possibility, they will seek their own launch capability—possibly through the acquisition of military-grade tactical ballistic missiles. According to RAND, "…to the extent that the United States and Europe are not commercially dominant in space launch, there are incentives for new countries to compete for launches."[238] While the United States should not undercut the commercial launch industry that provides needed launch services to numerous international customers, the United States can subsidize, or launch for free, key governmental satellites of important states for which the United States can obtain favorable behavior.

While the United States can finance the cost of spacelift for other states, it is a very expensive proposition. Although it still may be beneficial to offer low-cost launch services to other states in certain situations, the United States needs to continue working toward lowering the overall cost of spacelift in order to make this option more viable. According to RAND, "If the United States could create a reliable, responsive, lower-cost space launcher, it would have not only better access to space but additional military and diplomatic leverage as well. It could lower the perceived value of surplus ballistic missiles on the world market, deter the development of competing commercial launchers, and offer incentives to stem missile proliferation."[239]

The desire of states to acquire their own spacelift capability is one factor contributing to missile proliferation. While the proliferation of spacelift rockets is not a direct threat to the United States, although it might harm American commercial spacelift firms, the derivative uses

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[237] Johnson, Pace, and Gabbard, xii-xiii.
[238] Ibid., 27-28.
[239] Ibid., 28.

of space launchers pose a great threat to both the United States and its allies. Since it is in the United States interest to limit the number of states possessing ballistic missile technology, the United States should look to its spacelift capability to help achieve this diplomatic goal. Once again quoting RAND, "As an incentive for abiding by the terms of the Missile Technology Control Regime, the United States can offer to provide commercial launch services, as it has done for South Africa and Brazil."[240]

5. Manipulation of Global Positioning System (GPS) Data. The manipulation of GPS data to deny or disrupt service to individual states as either a form of punishment or as leverage to obtain some diplomatically desirable behavior is a controversial and difficult task that the United States should only consider under the most extraordinary circumstances. According to Billman, denial of GPS service could achieve the following effects: "Today's actual space assets can possibly demonstrate capabilities to accomplish such things as disrupt terrestrial activities of an adversary, such as electric production and distribution, financial data transfer, communication, etc."[241] Due to a complex interaction of commercial, civil, economic, military, and political issues, the ability to selectively deny GPS data over certain regions cannot be taken lightly. Specifically, the reliance of non-military users on the GPS signal, the political effect of denying the signal, and the technical capabilities required for such uses are all areas to be considered.

The reliance of commercial and civil entities on accurate and continued GPS data is such that denying this service will cause significant economic and political ramifications. When the Reagan administration decided, in the aftermath of the KAL-007 shoot down, to give civilians access to GPS to aid in international air navigation, little could it have imagined how non-military sectors would become dependent on this service.[242] The concerns of these sectors must be considered when contemplating denial of GPS service as a means for achieving diplomatic leverage. Further, denying GPS service to parts of the globe having little to no commercial or civil GPS activity, such as Afghanistan, still creates the international impression that other states cannot rely on the military-led GPS system. This is one of the justifications for Europe's Galileo satellite navigation constellation currently under development. "In a larger perspectives, a

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[240] Ibid., 27-28.
[241] Lieutenant Colonel Gregory M. Billman, "The 'Space' of Aerospace Power: Why and How" (master's thesis, General Ridgway Center for International Security Studies, University of Pittsburgh, May 2000), 80.

predictable and stable policy environment for GPS is necessary for it to become a global standard, to deter the proliferation of competing systems, and to allow United States industry the best chance of maintaining its current leadership position in growing commercial markets."[243]

To preclude the development of competing satellite navigation constellations, and improve the ability to selectively deny GPS signals to very discreet portions of the globe, the United States should continue to develop enhanced follow-on GPS satellites with a more discriminate denial capability. While the decision to deny GPS service to a specific region should never be taken lightly, the capability should be developed. Additionally, the United States should work in concert with its allies to prevent the establishment of a competing satellite navigation system that would provide our enemies the benefits of GPS-quality data without the possibility that the United States could turn it off.

6. Access to American Space Services. The full-service nature of American space assets provides numerous opportunities for leveraging space systems to directly achieve diplomatic objectives. "Space assets can be used as a civic action tool to monitor weather and environmental changes that affect a region's crops, forestation, rivers and lakes, animal migration and other natural resources. Space-based communications capabilities can be introduced to previously denied areas, to improve existing infrastructure, or in response to an emergency. Space-based navigation capabilities can be offered to allow access to remote areas and to assist in national emergencies."[244] As stated by Billman, "Entities are persuasively influenced via offerings of capabilities or resources otherwise technologically, politically, or fiscally unattainable on their own. General Billy Mitchell actually hinted at the applicability of airpower to this concept when, in 1925, he wrote in *Winged Defense,* 'Just as power can be exerted through the air, so can good be done, because there is no place on the earth's surface that air power cannot reach and carry with it the elements of civilization and good that comes from rapid communications.'"[245] The key is to meet the need other states have for space services while achieving a diplomatic benefit. Similarly to military aid, the reason for providing access to space services is to achieve a desired behavioral effect from the state receiving the assistance: "The fact that a nation's armed forces are dependent upon military equipment fabricated in

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[242] Johnson, Pace, and Gabbard, 35.
[243] Ibid., 37.
[244] Billman, 79.

another state may predispose the recipient to wish to please the donor. Again, this relationship is not absolute."[246] Ideally, providing other states access to space services can be achieved at a relatively small marginal cost since it could piggyback on the existing American space infrastructure. In some cases, however, the United States would have to place specific space systems into orbit, at a significant cost, to meet the needs of key allies.

Providing basic services to developing states provides a unique forum for enhancing American standing in the world: "In the years to come the United States [could] provide current meteorological data and satellite telecommunications to countries around the world, vastly improving its image as *the* country pursuing space for peace."[247] Additionally, providing basic services from space allows developing states to avoid the cost of indigenously developing the terrestrial infrastructure required for these systems: "Most of the world's population is without telephone service. Inexpensive, global, mobile satellite systems can provide regionwide and worldwide connectivity—an especially significant development for countries such as China, Brazil, and India that currently do not have extensive national infrastructures in place."[248] Conversely, the United States can deny these basic services to states as punishment for some undesirable act—but this act must be taken cautiously because of unintended consequences. For example, the United States attempted to have Iran removed from Intelsat in 1979 during the Iranian hostage crisis. The United States came to realize, however, that if it set the precedent of removing states from the international consortium for political reasons, Israel could be removed as well since the United States had no veto power over Intelsat.[249]

One of the most promising areas for systematic diplomatic leverage is in providing multi-spectral services to developing states. As described by Lambakis, the United States government already uses this data for a multitude of purposes: "The Department of Agriculture uses Landsat data to forecast crop production worldwide. Other civilian applications of national remote-sensing satellite programs, to include advanced spy satellites, include monitoring of world food, water, and energy supplies and mineral resources, forestry and rangeland management, fish and

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[245] Ibid., 66.
[246] Barry M. Blechman and Stephen S. Kaplan, *Force without War: U.S. Armed Forces as a Political Instrument* (Washington, D.C.: The Brookings Institution, 1978), 10.
[247] Matthew J. Von Bencke, *The Politics of Space: A History of U.S.-Soviet/Russian Competition and Cooperation in Space* (Boulder, Colo.: Westview Press, 1997), 50.
[248] Lambakis, 27.
[249] Johnson, Pace, and Gabbard, 30.

wildlife management, water resources management, and geological mapping."[250] An example of how this technology could be leveraged for assistance to other states while achieving diplomatic advantage is found in a NASA initiative that has increased crop yields by 10 percent, while lowering production costs, using multi-spectral imaging.[251] Finally, an additional manner for using multi-spectral imaging for achieving diplomatic benefit could be in the area of environmental monitoring. According to Von Bencke, "Thus the early 1990s boded especially well for cooperation in environment, remote sensing (such as resource detection and monitoring) and communications and data management applications. Even the Central Intelligence Agency Director, R. James Woolsey, promoted such cooperation: in a November 19, 1993 address, Mr. Woolsey said, "I suggested to [Mr. Primakov, Director of Russian Intelligence] that Russia and the United States could begin to help each other in tackling some environmental problems such as water pollution by swapping some photos. After all, going back many years, I have the best pictures of Lake Baikal and he has the best ones of the Great Lakes."[252]

In addition to providing basic infrastructure type services from space, the United States also possesses the ability make available access to advanced space services, such as high-quality imagery. According to Department of Defense Directive (DoDD) 3100.10, *Space Policy* , "Foreign military sales of U.S. space hardware, software, and related technologies may be used to enhance security relationships with strategically important countries." [253] While this type of support often becomes entangled in security considerations, foreign states are looking for these kinds of services. For example, during the initial deployment of Western troops into Bosnia following the signing of the Dayton Accords, the United States supplied the multinational force with a significant amount of imagery support. When the United States later reduced the size of its peacekeeping contingent, however, the amount of support provided to allied nations went down significantly—since American forces were no longer requesting the information. This lack of support from the United States reminded the Europeans of their "dangerous dependence" on American systems that they cannot rely upon.[254]

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[250] Lambakis, 22.
[251] Lanee Cooksey, "NASA Technology Transfer Project Offers Dramatic Agricultural Benefits," *NASA News*, 18 March 2002, n.p., on-line, Internet, 24 April 2002, available from http://www.ssc.nasa.gov/~pao/news/newsreleases/2002/MSW-02-034.txt.
[252] Von Bencke, 188.
[253] Department of Defense Directive 3100.10, *Space Policy*, 9 July 1999, 16.
[254] Lambakis, 61.

Security Considerations

As discussed in this chapter's first recommendation, Public Release of Imagery, the United States needs to closely review whether existing security policies are preventing space assets' full exploitation as a national power element. Not to repeat the previous discussion, however, three issues must be examined. First, with the impressive development of commercial space systems that reportedly rival the capabilities of governmental space systems, should the United States continue to classify imagery that can be obtained from commercial sources?[255] Second, what is the effect on the international community, particularly our allies, of strict security restrictions on space services? Third, does the potential diplomatic benefit of relaxing some security constraints outweigh some security concerns?

There is no doubt that high-quality imagery is no longer the exclusive domain of governments: "Public availability of timely high-resolution imagery represents a notable break with the past. We are moving from an era in which only a handful of governments had access to high-resolution imagery to one in which every government—and businesses, nongovernmental organizations, and terrorist and criminal groups—will have such access. Nonstate actors will be able to peer behind the walls of national sovereignty, accelerating a shift in power that is already under way."[256] This change is now a fact and will not be reversed.

In the *Third Wave*, Alvin Toffler proposes that elements of human society such as the United States and Western Europe are evolving out of the industrial age and into the information age.[257] While the conclusions Toffler reaches regarding the future of society and warfare are debated, it should be clear to all observers that a distinguishing feature of the modern age is the ubiquity and diffusion of information. Whether this order-of-magnitude-increase in the ability to acquire and share information constitutes a fundamental change in society is arguable (a premise accepted here, however)—the fact that it has policy implications for the United States is not.

One of the factors contributing to the global effusion of information is the rise of

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[255] Yahya A. Dehqanzada and Ann M. Florini, *Secrets for Sale: How Commercial Satellite Imagery Will Change the World* (Washington, D.C.: Carnegie Endowment for International Peace, 2000), vii. "By the year 2003 at least eleven private companies from five different countries expect to have high-resolution commercial remote sensing satellites in orbit. These new satellites have capabilities approaching those of military spy satellites, but with on key difference: their images will generally be available to anyone able to pay for them."

[256] Ibid., Foreword.

[257] See Alvin Toffler, *The Third Wave* (New York: William Morrow and Company,1980).

commercial imagery satellites. With the growing number of these satellites launched in the last decade, we have truly entered "the era of mutually assured observation."[258] As such, global transparency is increasing as states have a harder time concealing their activities from those able to purchase commercial satellite imagery. According to Ann Florini, "transparency is the opposite of secrecy. Secrecy means deliberately hiding your actions; transparency means deliberately revealing them."[259] A specific area of policy concern in this period of rapidly increasing transparency is whether the United States should adapt its historic security considerations regarding its national security space systems. In particular, have the traditional stringent security restrictions used in consideration of national security satellites outlived their usefulness when 1-meter commercial satellite imagery is available for purchase on the Internet?

Before examining what changes should be made to the traditionally tight security afforded American governmental satellites and products, it is important to understand the value that information collected by these satellites can have in a more transparent and open environment. Stated flatly, information, particularly imagery of denied areas, has the ability to coerce and therefore can be used by the United States to exercise power. In addition to offering a coercive tool, loosened restrictions on American satellite imagery offer increased opportunities for improving relations with other states, while also promoting American commercial satellite ventures. Failure to adapt security restrictions in this era of growing transparency will result in hamstringing American diplomacy by not allowing release of imagery that would assist in achieving diplomatic objectives, continuing the cycle of frustration many American allies feel when they are not allowed access to space-based imagery, and encouraging the foreign production and operation of commercial imagery satellites.

In an excellent analysis of the implications of space-derived transparency, Major C. J. Kinnan outlined three schools of thought regarding how the United States should respond to the new information-rich environment:[260]

> 1. Horaeists—Rooted in a traditional idealist sense of working toward ever greater cooperation and world peace, this school "argues transparency can lay the foundation for a civil 'global or transnational' society rooted in democratic

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[258] C.J. Kinnan, "Space-Derived Transparency: Players, Policies, Implication, and Synergies" (master's thesis, School of Advanced Airpower Studies, June 2001), 94.
[259] Ann M. Florini, "The End of Secrecy," *Foreign Policy,* 20 June 1998.
[260] Kinnan, vi-viii.

ideals—among them are order, justice, and peace."[261] While the nuances of this school are important, it is generally correct to say that they welcome the inevitability of increased space-derived transparency and encourage governments to do the same.

2. Preservationists—Rooted in the realist school that seeks to advance and protect national interests, Preservationists focus on the potential dangers of space-derived transparency and seek to find ways to mitigate its negative effects on American national security operations.

3. Synergists—This school seeks to find a middle ground between the extremes offered by the Horaeists and the Preservationists. Not having an identifiable leading proponent for this school, Kinnan offered his thesis as the beginning of academic thought that understands that "[c]omplete openness has inherent dangers but so does hiding behind walls."[262]

While a full analysis of each of the three schools is beyond the scope of this study (see Kinnan's thesis), the argument proposed here is that the United States should adopt the most open stance possible in recognition of the reality of commercial satellite imagery and growing global transparency—a position firmly within the Horaeist camp. While Preservationists, many of whom can be found within American national security organizations, will try to reduce the United States' vulnerability to the new age of transparency with policies such as shutter control and managed licensing, the growth of non-American commercial imaging satellite systems will ultimately make these policies moot in the mid- to long-term.[263] As such, the United States should be willing to relax security constraints for the release of information obtained by government satellites *within the technical parameters of existing commercial systems*. Failure to do so creates hindrances to effectively using space services to achieve diplomatic objectives, while also engendering perceptions of American unilateralism and militarism on the world stage.

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[261] Ibid., vi-vii.
[262] Ibid., viii.
[263] Kinnan, 92-93. "Since 1992, the proliferation of commercial [high-quality satellite] imagery has created tension between Horaeists who see it as a transformation tool as they build a more civil society and as a threat by Preservationists who fear an erosion of governmental power and perceive a threat to national security. This tension has resulted in policies to control its development and curtail the proliferation of [commercial high-quality satellite] imagery to malevolent forces. These control policies focus on unilateral measures such as the shutter control advocated by PDD-23, bi- and multilateral measures to include encouraging foreign governments to adopt similar policies, and shutter control by other means including the use of active measures to deny, degrade, deceive, and destroy satellites. Each of these policies has a common drawback in that any attempt to impose restrictions on users may result in them seeking other (foreign) markets…this trend has already started with the bulk of commercial imagery satellite development and operation in the next ten years being non-US. While the United States still maintains the lead in commercial imagery technology and products, this lead and market share could be ceded to less restrictive markets. The cost of this is more than economic, it means that the United States may actually lose transparency within the commercial imagery market. This means the United States would have little insight into

The United States must be concerned about the international effects of over-classification of space systems and services. Beyond just the negative opinions that it helps to create within other states, overly strict security constraints drive our allies to develop indigenous space systems for their own use. In an ironic twist, the very policies designed to make foreign development of similar space systems more difficult, actually contribute to the proliferation of these systems. "Current United States policy is to bludgeon even its closest allies to tighten restrictions on, for example, the distribution of space imagery. In fact, this heavy-handed approach has had the opposite effect. It pushed foreign governments to reject cooperation with the United States and pursue their own military space programs."[264] With the growing trend toward transparency in international relations, significantly contributed to by the proliferation of high-quality commercial imaging satellites, the United States should adopt a more open working relationship with allies on space systems and services in return for diplomatically useful benefits.

Finally, does the potential advantage of relaxing some security restrictions related to space systems outweigh the costs of doing so? As discussed throughout this study, there are a number of space system uses that the United States could adopt to directly achieve national goals. At times, however, such uses are not pursued because of security concerns:

> Time and again in the course of SALT, decisions about declassifying and revealing data that would build public support for the treaty ran aground on the 'sources and methods' barrier reef. The United States intelligence community put forth a vigorous argument that any action, such as release of photographs or other data which revealed United States 'sources and methods' of intelligence collection, could jeopardize the existence and success of those sources and methods. On the other side of the argument were those who argued that going public was worth the cost, for example, of obtaining public understanding and consensus on approval of the treaty. But time and again the 'don't let the Russians (and others) know how good we are or how bad we are' argument prevailed.[265]

While individual cases may justify not using space systems for diplomatic purposes due to security concerns, it should be recognized that security guidelines frequently exist separate and apart from compelling reasons not to use space systems to their full potential. As anyone who has worked in a bureaucracy knows, the inertia associated with standard operating procedures

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what is being imaged, by whom, and thus be unable to surmise the intent of various users."

[264] Lambakis, 281.

takes on a life of its own that is only loosely related to the original reason those procedures were formulated. It is time to move beyond this thinking to true cost/benefit analyses for the release of space services and cooperation with our allies.

This brief overview of security concerns surrounding space systems has only touched on macro-level issues. Do not be confused—the devil is in the details, not the overarching policy questions. Changing security restrictions is, for very good reasons, an extremely difficult undertaking. Prematurely lifting security constraints could have very significant effects on the ability of the United States to successfully employ space systems in the future. The time has come, however, for the government to take into account the full implication of commercial space systems and make adjustments to security procedures. Due to the detail-oriented nature of this kind of change, significant changes will require top-down direction—too much organizational power is at stake for a bottom-up approach to realistically succeed.

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[265] Bhupendra Jasani and Toshibomi Sakata, eds., *Satellites for Arms Control and Crisis Monitoring* (Oxford: Oxford University Press, 1987), 120.

Chapter 6

Conclusions

After reviewing much of the literature surrounding space theory and employment, it appears a theory gap exists regarding how space assets can be used to directly achieve diplomatic objectives. Ultimately, the use of space assets for this purpose is a strategic act that seeks to directly achieve national objectives while by-passing operational and tactical objectives that normally must be achieved first in terrestrial warfare. For the military professional, however, steeped in the warrior ethos, using military forces for purposes other than combat is not appealing—nor is it often regarded as the responsibility of the armed forces. While this mindset may not be surprising, it does overlook two important realities. First, as Sun Tzu is famous for noting, the height of military genius is not to defeat your enemy by force of arms: "Attaining one hundred victories in one hundred battles is not the pinnacle of excellence. Subjugating the enemy's army without fighting is the true pinnacle of excellence."[266] In today's terms, using space assets to directly achieve strategic objectives is a valid, if not enlightened, use of this tremendous national treasure. Second, as the governmental department with the preponderance of American governmental space systems, and as a key player in the interagency process that directly supports the President in the development of national objectives, the Department of Defense (DoD) is uniquely situated to advocate the use of space assets for directly achieving diplomatic objectives. The organizational weight it carries cannot be overstated—if DoD does not make the case, nobody else will, because nobody else has the organizational expertise and influence to do it.

In closing, this study has led to a number of conclusions regarding the use of space assets for directly achieving diplomatic objectives. These conclusions were hinted at in earlier chapters, but are offered here as a summary of the most salient ideas formed.

1. Space Assets are a National Power Element. The ability to operate routinely in and through space, across the spectrum of space missions, is both a gauge of national power and a significant contributor to it. Just as in the Age of Discovery it was the dominant European

powers that sent explorers and conquerors across the seas to discover and exploit new lands, so today it is the dominant world powers who use space as an area for scientific discovery, commercial exploitation, and military advantage. Because of this close relationship between space assets and national power, other states will actively seek to improve their spacefaring capabilities.[267] The United States must continually guard against being surpassed in space supremacy—the thought of a non-liberal hegemon supplanting the United States in space is truly a scary thought.[268] Further, the United States should manage its space assets as national power elements and systematically use them to achieve diplomatic leverage in the world.

2. Air Force Doctrine Must Recognize that Space Assets have an Important Role beyond the Theater Fight. Although the Air Force has taken a much needed step toward air and space integration in its latest space doctrine, it almost completely ignores any potential use of space assets beyond theater warfighting.[269] This oversight is partly to blame on the focus given to Air Force Doctrine—the operational level of war. While focusing on this level has the potential to dramatically improve space support to theater operations (a vital goal indeed), it overlooks the strategic use of space assets in directly achieving United States national goals—uses that could potentially avoid the need of fighting theater campaigns altogether. Fortunately, space assets are versatile enough to be simultaneously used both in support of the theater fight and directly to achieve American diplomatic goals—the Air Force's doctrine should be equally versatile. As the Executive Agent for space within DoD, the Air Force is the only service with the expertise and organizational gravitas to properly advocate for strategic uses of space assets—this advocacy should be reflected in Air Force doctrine and pursued in joint arenas.

3. The Structure of Space Discovery and Exploitation Will Drive the Space Weaponization Debate. The history of human discovery and development shows that humans seek full political intercourse in newly charted territory. This intercourse runs the gamut from

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[266] Sun Tzu, *Art of War*, ed. and trans. Ralph D. Sawyer (Boulder, Colo.: Westview Press, 1994), 177.
[267] See Mark A. Stokes, "Space, Theater Missiles, and Electronic Warfare: Emerging Force Multipliers for the PLA Aerospace Campaign" (paper presented at Chinese Military Affairs: A Conference on the State of the Field, Fort McNair, Washington, D.C., 26-27 October 2000), and "Space Station Ambitions for China," *CNN Online*, 3 April 2002, n.p., on-line, Internet, 24 April 2002, available from http://www.cnn.com/2002/TECH/space/04/03/china.space/index.html. Both sources are examples of how China is seeking to upgrade its military and civil space capabilities.
[268] See Everett C. Dolman, *Astropolitik: Classical Geopolitics in the Space Age* (London: Frank Cass, 2002) for a sobering, if unlikely, description of how a state could "seize" orbital space.
[269] Air Force Doctrine Document 2-2*, Space Operations*, 27 November 2001.

peaceful to violent. As such, we can expect states to continue developing means, such as increasingly using space for military useful functions, and introducing weapons into space, for solving political problems using space assets. Further, until states establish full political discourse in space, the ability to develop space's full potential will be impeded. While some may argue that an Antarctica model may apply to space—that is, nations are prohibited from placing military bases on that continent or using it for any military purpose[270]—the reality is that Antarctica, unlike space, has no immediate military utility. In the absence of a concrete, verifiable, and enforceable treaty against space weapons (a combination that appears highly unlikely given the current international order), states will continue to pursue space weaponization irrespective of whether it is a good idea.

4. While Space Weaponization may have Already Effectively Occurred, the Psychological and Political Impact of Placing Weapons in Space will be Momentous. Having just argued that the drive to place weapons in space appears inevitable given the need for human societies to politically interact across the spectrum of conflict, it is important to note that the introduction of weapons in space will be a defining moment in history. The fact that space weaponization has already effectively occurred due to the close integration of American space assets with its global strike complex is immaterial. Just as Julius Caesar's crossing of the Rubicon River had profound psychological and political implications for ancient Rome, so too will placing weapons in space affect the international community. This result is not unique to space weapons. The development of long-range bombing during World War I had significant psychological ramifications on European citizenry because for the first time their enemies could by-pass the killing fields of France and directly strike at civilian targets. Similarly, space weapons will offer the possibility of holding any target on the globe at risk within a matter of minutes—and do so largely without any possibility of being stopped. To prepare the international community for the possible weaponization of space, the United States must pursue a diplomatic, informational, and economic strategy while it develops these systems. Transparency and cooperation with traditional allies can help to alleviate concerns and mitigate negative consequences.

5. Security Constraints have Not Caught Up with the Reality of Commercial Space

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[270] *Antarctica Treaty,* 1 December 1959, n.p., on-line, Internet, 24 April 2002, available from

Systems. The world of 2002 is not that of 1957, yet many of the security constraints of that bygone era still apply today. These constraints, normally designed to protect sources and methods, prohibit effectively using space assets as a national power element capable of systematically achieving diplomatic objectives. While sources and methods for the most leading edge space systems must be protected, we need to understand that commercially available systems have rendered some, but not all, of our security concerns moot. Organizationally, however, it is very difficult to change security considerations given the wide range of departments and agencies that must agree to changes. In this sense, the fact that numerous United States government entities are involved in national security space matters, and no one department has overall responsibility, makes changing fundamental security guidelines a very complicated undertaking.

6. National Security Space Operations Should be Consolidated in One Governmental Department. As mentioned above, the failure of having one entity responsible for American national security space operations has repercussions for how space assets are employed in support of national objectives. While there will always be an imperative for a civilian oriented space agency such as the National Aeronautics and Space Administration to exploit space for scientific and civil purposes, there is now a need to consolidate national security space operations. Currently, the intelligence agencies; DoD; the individual services, commands, and agencies within DoD; the Department of Commerce; and others, all play a significant role in developing and advocating space policy. Although dispersing responsibility is one way to ensure that space systems are developed to support numerous important security functions, it also waters down effective policy making and efforts to focus space systems on directly achieving national objectives. The Space Commission's recently enacted recommendations, and the future organizational realignments it proposes, are a noteworthy step in the right direction.[271]

In the final analysis, space systems have a strategic role to play in directly achieving

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http://sedac.ciesin.org/entri/texts/acrc/at.txt.html.

[271] Space Commission, *Report of the Commission to Assess United States National Security Space Management and Organization* (Washington, D.C.: Government Printing Office, 2001), 79-98. According to the report, "The Commission believes that once the realignment in the Air Force is complete, a logical step toward a Space Department could be to transition from the new Air Force Space Command to a Space Corps within the Air Force." Further, "an evolution to a Space Corps could involve integration of the Air Force and NRO acquisition and operations activities for space systems."

American diplomatic objectives. Such uses do not have to come at the expense of current warfighting integration initiatives. As third wave states continue to increase their reliance on space systems, and as the desire of other states to use and acquire space systems grows, space assets will increasingly multiply in importance as a national power element. While it is still unclear why American leaders claimed knowledge of what happened during the EP-3 incident with China, and then did not provide proof of their allegations to achieve diplomatic leverage, it is now evident that in future diplomatic standoffs the United States has a unique tool in its bag of power elements that can be used to help directly achieve national objectives. This tool may not always be the best to use, but it does offer an option that will only grow in importance, across the spectrum of conflict, at exercising national power to get other states to do what they would not otherwise do.

Acronyms

ABM	Anti-Ballistic Missile
AFDD	Air Force Doctrine Document
AFSOP	Air Force Space Operations Plan
AFSPC	Air Force Space Command
BUR	Bottom Up Review
CIA	Central Intelligence Agency
CINC	Commander-in-Chief
CNO	Chief of Naval Operations
CORM	Commission on Roles and Missions
DoD	Department of Defense
DoDD	Department of Defense Directive
DSP	Defense Support Program
ExCom	Executive Committee
FDO	Flexible Deterrent Option
GPS	Global Positioning System
ICBM	Intercontinental Ballistic Missile
IGY	International Geophysical Year
ISR	Intelligence, Surveillance, and Reconnaissance
ISS	International Space Station
JCS	Joint Chiefs of Staff
JFC	Joint Force Commander
JP	Joint Publication
KAL	Korean Air Lines
MOOTW	Military Operations Other Than War
MTCR	Missile Technology Control Regime
NASA	National Air and Space Administration
NATO	North Atlantic Treaty Organization
NCA	National Command Authorities
NSC	National Security Council

PGM	Precision Guided Munition
SALT	Strategic Arms Limitation Talks
SEW	Shared Early Warning
SPACEAF	14th Air Force—the Air Force component of USSPACECOM
SPOT	Satellite Pour l'Observation de la Terre
TBMD	Theater Ballistic Missile Defense
USAF	United States Air Force
USSPACECOM	United States Space Command
WMD	weapons of mass destruction

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