

## **The Chinese Space Program**

A Cooperative Conundrum: Defining the Space Relationship between Two Superpowers

Prospectus for Croft Senior Thesis

Jessica Sewell

### **Research Question**

It is difficult to argue with the emergence of China as a superpower posing a substantive threat to waning American dominance on the world stage. However, the proverbial rise of China is not limited to the population 1.4 billion nation's economic growth, manufacturing excellence, or surplus of PhD's. Positioned at a close third behind the United States and former Soviet Union, China has risen to a competitive, if not dominant position in outer space pursuits. To date, China has launched more than one hundred orbital missiles since the 1970s,<sup>1</sup> and government White Papers released in 2003, 2006<sup>2</sup> and 2011 lay out even more ambitious plans for the future. The Chinese in the past decade have begun construction on the Tian Gong, or Heavenly Palace, space station, and have released plans for lunar exploration and manned spaceflight outside of Earth's orbit. Without a doubt, the space exploration accomplishments by the Chinese since their program's inception are impressive.

However, not all of the hype concerning China's space satellite and missile advances is positive. The Chinese space program has been simultaneously praised by some members of the international community while also condemned by other members of the United States government. Chief among these concerns on the part of the U.S. are national security interests, the potential for the militarization of space, the nebulous or absent legislation regulating space activity in China, and the generally secretive and at times

---

<sup>1</sup> Jeffrey Logan: *China's Space Program: Options for U.S.-China Cooperation*, 2007

<sup>2</sup> China's Space Activities in 2006; China's Space Activities (2003 White Paper)

hostile climate of negotiating with Beijing on issues considered “state secrets” or “sensitive” technologies. Because of this, the sometimes-lukewarm relationship between the U.S. and China is frequently contingent upon legalities and politics.

In this senior thesis project, I plan to explore the environment, nature and implications of United States-China space relations. In particular, I look to address the extent of cooperation and competition possible between the two programs in the future, and also how domestic politics and international space legislation impact that relationship. According to my findings, it appears that some space trade cooperation is possible between the U.S. and China if the technologies involved do not pose a significant threat to the national security of either party. Also, U.S. policymakers must tread carefully in the nebulous legal environment of space relations with China, keeping in mind that thousands of years of cultural differences, as well as a lack of Chinese emphasis on rule of those laws written down, could result in potentially devastating misunderstanding. Differing expectations and values lead to the possibility for a difficult but navigable cooperative relationship.

In sum, the question of my research is as follows: How should we characterize the space relationship between the United States and China on the spectrum of cooperation to competition? Should we characterize this relationship as more of a symbiotic partnership or a competitive rivalry? In addition, I want to examine how the role of the U.S. and China as superpowers plays into their space relationship. How will this relationship develop in the near future, and how are policymakers shaping the U.S.-China relationship with regards to space?

### Analysis

At face value, the “international cooperation” components of the laws of both the American and Chinese space programs seem to promote the mutual cooperation and sharing of space technologies. According to Title II, Section 205 of the United States National Aeronautics and Space Act of 1958 titled “International Cooperation,” NASA is permitted to “engage in a program of international cooperation... and in the peaceful application of the results thereof, pursuant to agreements made by the President with the advice and consent of the Senate”<sup>3</sup>. On the other hand, the 2003 White Paper on China’s Space Activities states, “China persistently supports activities involving the peaceful use of outer space, and maintains that international space cooperation shall be promoted and strengthened on the basis of equality and mutual benefit, mutual complementarity (sic) and common development”<sup>4</sup>. As stated in the White Paper, the Chinese claim to adhere to the United Nations’ “Deceleration on International Cooperation on Exploring and Utilizing Outer Space for the Benefits and Interests of All Countries, Especially in Consideration of Developing Countries' Demands,” which was approved by the 51st General Assembly of the United Nations in 1996<sup>5</sup>. However, years of politically charged debate and frequently unfriendly trade relations have questioned the accuracy and legitimacy of these legal claims.

In the United States arena, some worry that the military structure and track record of the Chinese space program lessen the possibility for future cooperation on the space front between the U.S. and China or even forbid any cooperation altogether. Concerning

---

<sup>3</sup> The National Aeronautics and Space Act, United Nations Office for Outer Space Affairs

<sup>4</sup> China's Space Activities (2003 White Paper)

<sup>5</sup> China's Space Activities (2003 White Paper)

perceived military threats, China's vague and imprecise policies and unwillingness to fully divulge the details of its launch activities have resulted in surprises for the international space community. Specifically, China's launch of an ASAT (anti-satellite) missile in 2007 was not only an illustration of Chinese technological progress, but to some it also symbolized the potential for other, perhaps more nefarious space activity in years to come. The rashly planned testing ended up creating an unprecedented amount of space debris and called into question the stability, planning, and motives of the Chinese ASAT program. According to a National Aeronautics and Space Administration (NASA) assessment, China's 2007 ASAT testing and the communication satellite's resulting destruction produced an overwhelming amount of space debris, overall increasing the amount of space debris circling the Earth by ten percent- more than half of the total debris produced by all countries that year<sup>6</sup>. For this reason, some speculation and questioning of China's motives is not completely unjustified.

Trade and export policies have also exerted a molding influence on the US-China space relationship. Some, such as 10<sup>th</sup> District of Virginia Congressman Frank R. Wolf, posit that the United States and China should exchange no technology or space-related materials because of their potential military applications. Congressman Wolf believes that the recent cuts to NASA's budget "clear the way for Chinese dominance in space,"<sup>7</sup> and remove America's competitive edge. What's more, in a letter to NASA Administrator Charles F. Bolden, Jr., Congressman Wolf stated, "I remain ardently opposed to any cooperation with the Chinese and will work to stop the implementation of any U.S.-

---

<sup>6</sup> Bruce W. MacDonald: China, Space Weapons and U.S. Security, 2008

<sup>7</sup> Frank R. Wolf Statement on the FY11 NASA Budget Proposal, February 2010

Chinese human spaceflight programs or information-sharing agreements”<sup>8</sup>. In fact, members of Congress have worried that American satellite-exporting firms have directly aided the development of ballistic missiles and space exploratory equipment through trade and export in recent years<sup>9</sup>. The Export-Administration Act of 1979, which lapsed in August 2001<sup>10</sup>, restricted exports on dual-use technologies that could pose a threat to US national security. Since 2001, dual-use technology export legislation responsibility has transferred to the President’s invocation of emergency powers under the International Emergency Economic Powers Act<sup>11</sup>.

To Congressman Wolf’s credit, the possibility of U.S. technologies in Chinese hands becoming a national security threat should not be entirely disregarded. For example, “Congress has been concerned about whether U.S. firms, in exporting satellites, provided expertise to China for use in its ballistic missile and space programs and whether the Administration’s policies might facilitate transfers of military-related technology to China”<sup>12</sup>. According to the wording of the Export-Administration Act, “the EAA provides the statutory authority for export controls on sensitive dual-use goods and technologies: items that have both civilian and military applications, including those items that can contribute to the proliferation of nuclear, biological, and chemical weaponry.”<sup>13</sup> Naturally, the development of any of these threats would be far outside the scope of interest for pursuers of U.S.-China cooperation on space. Finding the balance between cooperation, competition, and promoting national security must remain a key priority in negotiations

---

<sup>8</sup> Congressman Frank Wolf Letter to NASA Administrator Charles Bolden, October 2010

<sup>9</sup> Shirley Kan: China: Possible Missile Technology Transfers from U.S. Satellite Export Policy – Actions and Chronology, 2001

<sup>10</sup> Export Administration Act, Bureau of Industry and Security, US Department of Commerce

<sup>11</sup> Export Administration Act, Bureau of Industry and Security, US Department of Commerce

<sup>13</sup> Ian F. Fergusson: The Export Administration Act: Evolution, Provisions, and Debate, 2009

moving forward. In this aspect, I largely agree with Joan Johnson-Freese's analysis in her book *The Chinese Space Program: A Mystery Within a Maze*, and plan to project her findings from the late 1990s onto the situation of the present decade.

### **Methodology**

This research paper will utilize a qualitative method of research to evaluate the United States-China space relationship and clearly define its current and potential nature. Drawing mainly from the existing Chinese and American official statements, as well as congressional research projects, policy analysis and even events from the mainstream news within the past decade, this research will attempt to evaluate the American and Chinese space programs with a multifaceted approach.

In order to define the relationship between China and the United States on space issues, I will first need to define a few key elements: what makes a "superpower" and the role that the U.S. and China, as superpowers, play in the international space sphere; the components of U.S., Chinese, and international space laws; and the basic nature of political cooperation and competition. The U.S.-China relationship is already a complex one based largely on misunderstandings, cultural differences, and sometimes-hostile trade policy. Because of this, I need to analyze the existing policies of both countries concerning space exploration and their views on the sharing of dual-use technologies, and also look at how those policies have influenced past, present, and future space efforts. Also, I will examine public statements made by influential players in the CCP and in the American system, paying close attention to the wording and depiction of the U.S.-China space relationship as implied in these comments. In addition, I plan to define the term "superpower" in order to

further strengthen my characterization of the U.S.-China space relationship and examine the role that the status of the U.S. and China, as superpowers, plays in their space relations.

The structure of the final project will be arranged as follows. In order to fully explore the extent of U.S.-China space cooperation and competition, as well as the implications of this relationship, this project will first provide a concise overview of the American and Chinese space programs, focusing mainly on substantial differences in structure, organization, and goals. The second portion of this research will explore the current political landscape in the United States concerning China, space cooperation, and trades in technology. Included in this portion will be profiles of pivotal legislations and influential policymakers involved in the talks on China and space. This section will be followed by a similar glimpse into the workings of the Chinese political system, specifically with regards to the United States and space. Incorporated into this research will be opinions and fallout of the 2007 Anti-Satellite testing, as well as some discussion on China's space plans for the near future. To deepen understanding of the uncertainties of cooperation with China on space exploration, the next section will explain existing international space laws and comment on China's lack of similar legislation. Finally, a closing section will provide my own analyses and insights into the set of U.S.-China Space issues.

While I have yet to find all of the source materials that will be used in building my argument, those congressional reports, white papers and official statements I have analyzed so far have led me to conclude that the U.S.-China space relationship can be loosely defined as a sort of "competitive, uneven competition." While the Chinese view their space program as a physical embodiment of the ever-growing Chinese presence on the world

stage, many American policymakers either ignore the entire space issue or brush it off as an unnecessary expense to be handled by the private sector. Nevertheless, the U.S. would be unwilling to allow China to so easily surpass the U.S. in space exploration, and maintenance of “space dominance” is still a hot topic in political discourse. Most recently, Republican presidential candidate Mitt Romney mentioned space policy and his disagreements with the Obama administration’s policy decisions in a white paper released in September 2012:

“President Obama has failed to deliver a coherent policy for human space exploration and space security... As a result, he has created uncertainty and confusion within U.S. industry and the international community... America’s capabilities are eroding, and with each passing year will become more difficult to rebuild.”<sup>14</sup>

In the lead-up to the impending 2012 presidential election, the competitive atmosphere will elicit more and more politically charged statements such as Gov. Romney’s.

Consequently, these policy notes, formal statements, and opinions will be included in my research project. On the other hand, President Obama also mentioned space policy in a white paper released in September 2012<sup>15</sup>, though his remarks focus more on detailing his administration’s prior accomplishments rather than proposing a new direction for the United States in space. China, however, was not even referenced in his discussion. As I go forward with this thesis project, the election and its aftermath will also play a key role in my analysis as they will reveal just which set of ideas will be implemented in future U.S. space policy, particularly concerning China.

---

<sup>14</sup> Romney, Mitt and Paul Ryan. “Securing U.S. Leadership in Space.” September, 2012

<sup>15</sup> Obama, Barack. “President Obama’s First Term: Key Accomplishments for NASA and Space”. September, 2012



### Works Cited

- “China’s Space Activities in 2006,” White Paper issued by the Information Office of the State Council of the People’s Republic of China, October 2006. Web. 06 Sept. 2012.
- "China's Space Activities (White Paper)." *CNSA.gov.cn*. China National Space Administration, 15 Dec. 2003. Web. 06 Sept. 2012. <<http://www.cnsa.gov.cn/n615709/n620681/n771967/69198.html>>.
- "Export Administration Act." *U.S. Department of Commerce*. U. S. Bureau of Industry and Security, 20 Oct. 2003. Web. 06 Sept. 2012. <<http://www.bis.doc.gov/ea.html>>.
- Fergusson, Ian F. *The Export Administration Act: Evolution, Provisions, and Debate*. Rep. no. RL31832. Congressional Research Service, 15 July 2009. Web. 6 Sept. 2012.
- Figliola, Patricia M., Carl E. Behrens,, and Daniel Morgan. *U.S. Space Programs: Civilian, Military, and Commercial*. Rep. no. IB92011. Congressional Research Service, 13 June 2006. Web. 6 Sept. 2012.
- "GA Resolutions Pertaining to the Peaceful Uses of Outer Space." *UNOOSA.org*. United Nations Office for Outer Space Affairs, 2012. Web. 06 Sept. 2012. <[http://www.unoosa.org/oosa/en/SpaceLaw/gares/html/gares\\_21\\_2222.html](http://www.unoosa.org/oosa/en/SpaceLaw/gares/html/gares_21_2222.html)>.
- Johnson-Freese, Joan. *China's Manned Space Program: Sun Tzu or Apollo Redux?* Rep. Vol. LVI. Newport, RI: Naval War College Review, 2003. Ser. 3. *DTIC Online*. Web. 6 Sept. 2012.
- Johnson-Freese, Joan. *The Chinese Space Program: A Mystery within a Maze*. Malabar, FL: Krieger Pub., 1998. Print.

- Johnson-Freese, Joan. *Proliferation Papers: China's Space Ambitions*. Rep. Paris: IFRI Security Studies Center, 2007. *Google Scholar*. Web. 28 Aug. 2012.
- Johnson-Freese, Joan. *Space Wei Qi: The Launch of Shenzhou V*. Rep. 2nd ed. Vol. LVII. Newport, RI: Naval War College Review, 2004. *DTIC Online*. Web. 6 Sept. 2012.
- Johnson-Freese, Joan. "Strategic Communication with China: What Message about Space?" *China Security* 2 (2006): 37-57. *Google Scholar*. Web. 6 Sept. 2012.
- Kan, Shirley A. *China: Possible Missile Technology Transfers from U.S. Satellite Export Policy – Actions and Chronology*. Rep. no. 98-485 F. Congressional Research Service, 5 Sept. 2001. Web. 6 Sept. 2012.
- Logan, Jeffrey. *China's Space Program: Options for U.S.-China Cooperation*. Rep. no. RS22777. Congressional Research Service, 14 Dec. 2007. Web. 6 Sept. 2012.
- MacDonald, Bruce W. *China, Space Weapons, and U.S. Security*. CSR Rep. no. 38. New York: Council on Foreign Relations, 2008. Print.
- Oettinger, Philip H. "National Discretion: Choosing CoCom's Successor and the New Export Administration Act." *American University International Law Review* 9, no. 2 (1994): 559-595.
- Romney, Mitt, and Paul Ryan. *Securing U.S. Leadership in Space*. White Paper. Romney for President, Inc., 22 Sept. 2012. Web. 22 Sept. 2012.  
<<http://www.mittromney.com/blogs/mitts-view/2012/09/securing-leadership-space>>.
- "The National Aeronautics and Space Act." *National Space Law: United States of America*. United Nations Office for Outer Space Affairs, 2012. Web. 06 Sept.

2012. <[http://www.unoosa.org/oosa/en/SpaceLaw/national/united\\_states/national\\_aeronautics\\_and\\_space\\_act\\_85-568E.html](http://www.unoosa.org/oosa/en/SpaceLaw/national/united_states/national_aeronautics_and_space_act_85-568E.html)>.

Qi, Yongliang. "A Study of Aerospace Legislation of China." *Journal of Space Law* 33.2 (2007): 405-10. Print.

Smith, Marcia S. *China's Space Program: An Overview*. Rep. no. RS21641. Congressional Research Service, 18 Oct. 2005. Web. 6 Sept. 2012.

Wolf, Frank R. "Letter to NASA Administrator Bolden on Trip to China." Letter to Charles F. Bolden, Jr. 12 Oct. 2010. *Congressman Frank R. Wolf, 10th District of Virginia*. United States Congress, 12 Oct. 2010. Web. 6 Sept. 2012. <<http://wolf.house.gov/index.cfm?sectionid=357&itemid=1554>>.

Wolf, Frank R. "Wolf Statement on Obama Space Exploration Budget." Address. Statement on the FY11 NASA Budget Proposal. 24 Feb. 2010. *Congressman Frank R. Wolf, 10th District of Virginia*. United States Congress, 24 Feb. 2010. Web. 6 Sept. 2012. <<http://wolf.house.gov/index.cfm?sectionid=357&itemid=1554>>.

Wong, Edward, and Kenneth Chang. "Space Plan From China Broadens Challenge to U.S." *The New York Times*. The New York Times, 30 Dec. 2011. Web. 06 Sept. 2012. <[http://www.nytimes.com/2011/12/30/world/asia/china-unveils-ambitious-plan-to-explore-space.html?\\_r=1](http://www.nytimes.com/2011/12/30/world/asia/china-unveils-ambitious-plan-to-explore-space.html?_r=1)>.