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**The Cold War, Space Exploration, and the
Sino-US Relationship, 1956-1970**

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School of History and Culture
Northeast Normal University, China

Research of the Program in Arms Control,
Disarmament, and International Security
University of Illinois at Urbana-Champaign
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Professor Zhang was a visiting scholar at ACDIS (University of Illinois) during 2008-9 on a one-year research scholarship fully sponsored by the China Scholarship Council.

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I bear full responsibility for any errors incurred in this paper.

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Changchun, Jilin, China
February 2010

PART ONE

Introduction

Sino-American interactions on space exploration during the early cold war period have attracted little attention from both Chinese and American scholars. Nevertheless, early cold war space exploration is an important issue, in that it discloses the features and rationales of US policy towards China within the field of advanced technology systems, and more broadly offers a key to understanding the complicated relationship between China and the United States during the early cold war. Considering the sharp rivalry that existed between the two states, China's early space exploration provides an unique angle to look at the special modes of interaction between China and the United States in the arena of non-official ties at that time. It is the purpose of this paper to examine the "American Factor" in China's space policy decision-making, and to illustrate the tendencies of US cold war policy toward China—largely characterized by overreactions to China's capabilities—by presenting facts about China's space program based on archival research, and the US government's policies for coping with what it perceived to be China's intentions and capacities. At the same time, this paper also endeavors to develop a better understanding of the political, military, ideological, and even psychological features of the cold war, and its long-term effect on Sino-American relations.

Recently, considerable attention has been given to China's contemporary space program and Sino-US security relations in outer space. Both in the US and China, studies have been primarily focused on the military aspects of China's space exploration. American scholars have talked about the Chinese anti-satellite (ASAT) test, the asymmetric threat posed by Chinese space exploration,¹ and the potential "space surprise" by China.² Conversely, Chinese scholars have kept an eye on the US national space policy, which gets updated each year, and on the possible space race between the two countries. Though the international situation and Sino-US relations have changed rapidly since then, one thing has remained the same throughout the cold war period until now—the American government's consistent concern with and fear of China's space exploration. Therefore, it is important to research into how China and the United States perceived each other, and how these kinds of perceptions were merged into their policy-making frameworks.

Several books on China's space program have been published in recent years.³ However, few books or articles are concerned with China's early space exploration and the US reaction to it, except for some references

¹ Bates Gill and Martin Kleiber, "China's Space Odyssey," *Foreign Affairs* (May/June 2007), Vol. 86 Issue 3; Craig Covault, "Covert Chinese ASATs," *Aviation Week & Space Technology* (3/5/2007), Vol. 166, Issue 10; Phillip C. Saunders and Charles D. Lutes, "China's ASAT Test Motivations and Implications Preview," *Joint Force Quarterly* (summer 2007), Issue 46.

² A commission headed by former US Defense Secretary Donald Rumsfeld warns against "Space Pearl Harbor." Established in 2001, the commission is made up of Republican and Democratic lawmakers and experts from the military and the private sector. It is tasked with assessing US national security space management and organization.

³ Roger Handberg and Zhen Li, *Chinese Space Policy: A Study in Domestic and International Politics* (Routledge, 2007); Brian Harvey, *China's Space Program: From Conception to Manned Spaceflight* (Praxis Publishing Ltd, 2004); Bruce W. MacDonald, *China, Space Weapons, and U.S. Security* (Council on Foreign Relations, 2008); Zhang Jun et al. ed., *Space Exploration of Contemporary China* (China Social Science Publishing House, 1986) [张钧主编:《当代中国的航天事业》,北京:中国社会科学出版社,1986年]; Gong Xiaohua, *The Hidden Story of China's Decision Making on Aerospace* (China Wenshi Publishing House, 2006) [巩小华:《中国航天决策内幕》,北京:中国文史出版社出版,2006年].

on arms control and technology transfer issues. Also, there is little attention paid to the symbolic meaning of the space program during the early cold war, especially as it pertains to the special relationship between China and the United States throughout the period of 1956-1970.⁴ This paper seeks to begin to address those gaps in the existing literature.

⁴ The year of 1956 was chosen as the starting point for this research project because this date is well accepted by both Chinese and American scholars as the beginning year of China's space program, and also because the year witnessed the official start of China's missile program, which is the basis for China's space program in any case. However, there was no evidence showing that the early Chinese missile program was aimed at space launch until 1957. The year of 1970 was chosen as the ending year covered by this research paper because of the Chinese first satellite launched in 1970.

PART TWO

Chairman Mao's Foreign Policy Dilemma and the Beginning of China's Space Program

The beginning of China's space program is usually traced back to 1955, the year Dr. Qian Xusen (Tsien Hsue-shen) returned to China due to the excesses of the McCarthy era in the United States;¹ to 8 October 1956, the day the Fifth Academy (also known as the Missile Technology Academy) was founded under the Ministry of National Defense;² or to July 1956, when "Outline of the Twelve-Year Plan for Science and Technology Development: 1956-1967" was issued by the Chinese State Council. As a matter of fact, China did not seriously consider a satellite program or a space program until October 1957, a date that corresponds to the orbiting of the first Soviet satellite. It was the success of Sputnik I, both in the field of advanced technology and the field of cold war politics, that inspired Chairman Mao Zedong to pursue new avenues in solving the foreign policy dilemma he faced during those years.

Throughout 1956 and early 1957, Chairman Mao was not satisfied with the situation at home or abroad. Since the establishment of the People's Republic of China, he was dedicated to a grand strategy of strengthening China by all means. China's economy had been seriously stunted by the Korean war since 1950. After five-year construction under the leadership of Premier Zhou Enlai, the economy started to recover steadily and slowly. To maintain the momentum of positive economic growth, as well as to avoid rash investment and production in the name of anti-rightist policies, Premier Zhou declared a policy of Opposition to Rash Advance (*fan maojin*). However, Chairman Mao gradually lost patience with Zhou's policy. He seriously criticized Zhou's conservatism later on at a conference by saying, "Are you opposing 'Rash Advance'? I am opposing Opposition to 'Rash Advance'!"³ Premier Zhou was forced to admit his "mistakes" in economic policy-making.

One of the factors that contributed to Mao's attitude towards Zhou's policy was his anxiety and frustration over China's international situation, especially the Sino-US relationship. It was well known that Chairman Mao had publicly and frequently said China would not pursue recognition from the United States, and was not eager to join the United Nations as well, unless the Taiwan Problem was resolved. To Chairman Mao, the existence of the Taiwan Problem, along with the isolation of China, ultimately resulted from China's backwardness, including its backwardness in advanced technology. He reiterated frequently that "China is humiliated [by the United States]; they have something in hand, which is called Atom bomb. However, we do not even get a small one." In a similar vein, he declared, "If you want to be accepted, to be recognized, you have no choice but to bear the humiliation. So, I'd rather not join the UN, not accept those countries' diplomatic recognition."⁴ With very little economic knowledge or professional background, Chairman Mao did not care much about economic

¹ Bruce W. MacDonald, *China, Space Weapons, and U.S. Security*, p. 6.

² Brian Harvey, *China's Space Program: From Conception to Manned Spaceflight*, preface, p. xi.

³ Ye Kuangzheng, *Those Past Events: A Lengthwise and Crosswise Talking On Historical Declassified Archives* (China Wenshi Publishing House, 2006) [叶匡政:《大往事:纵横历史解密档案》,中国文史出版社出版2006年。]。

⁴ Mao Zedong, "On the issue of resuming China's lawful seat at the United Nations, Sep 30, 1956," in Party Literature Research Center, CCCPC ed., *Selected Works of Mao Zedong on Diplomacy* (Beijing: Central Party Literature Publishing House, 1994), pp.263-274. [毛泽东,“关于恢复中国在联合国的合法席位问题”,1956年9月30日,《毛泽东外交文选》,中央文献出版社1993年版。]。

principles. What he did care about is reflected in an old Chinese saying, “Man can triumph over nature.” In other words, he believed in men’s initiative and self-motivation. “Our objective is not only to catch up with the US, but also to overrun them. There are only a little more than 100 million people in the US, and we have 600 million, so we should catch up with the US...Have a look at us now. We are in a position to be teased and bullied. We must do something to change this.”⁵ In Mao’s perspective, the Americans would not go back to the negotiating table, until such time that China had become strong and prosperous enough to force them to do so.

Chairman Mao wanted the People’s Republic of China to be recognized, and furthermore to break the political blockage and economic sanction led by the United States, only if it happened without any humiliation. To fulfill Mao’s Foreign Policy Objective, China needed the Soviet Union as a partner in diplomacy, trade, and technology development.

Nevertheless, China’s relations with the Soviet Union were not in harmony at that time. Among others, Chairman Mao criticized Nikita Khrushchev’s strategy of “peaceful coexistence,” claiming that it obscured the fundamental distinction between communism and capitalism. The truth was that China and the USSR were not in the same situation. China was struggling to survive the cold war isolation created by the United States and other Western countries. China hoped the Soviet Union could assist by showing a tough and uncompromising policy toward the United States, but it failed to do so. On the other hand, thanks to economic and technical sanctions from the Western countries, China heavily depended on the assistance and cooperation of the Soviet Union. Likewise, the Soviet Union needed the support of China to strengthen its position within other socialist countries. That was why the two countries maintained an uneasy friendship, even though the contradictions and disagreements had long existed between them. As a matter of fact, the Chinese government had negotiated with the Soviet Union for aid with nuclear and missile technology since early 1956, but it received little help except some outdated missiles such as R-1s.

The year of 1957 witnessed great changes in human society. On October 4, 1957, the Soviet Union launched its first man-made satellite, which defeated the United States at least on the first step of space exploration. Chairman Mao was very excited about the orbiting of Sputnik I, which in some sense proved his positive prophecy on the final success of socialism. Beyond that, he found new chances to change China’s international position through advanced science and technology. Immediately after the launching of the Soviet satellite, the Xinhua News Agency, which was under the direct control of Chairman Mao, published successive articles addressing the panic of the West and their changing attitude toward the Soviet Union. In an editorial comment of October 7, American secretary of defense Neil H. McElroy was quoted as saying, “the Soviet satellite once again proves that we must show respect to the Russians.”⁶ Five days later, another article argued, “For the past years, Western policy has been established on an assumption of Western superiority. Now it turns out that the assumption is out of date. They have no choice but coexisting with Communism.”⁷ Obviously,

⁵ Mao Zedong, “Speech in the Colloquia on the Socialist Transformation of Capitalist Industry and Commerce, Oct 29, 1955,” in Party Literature Research Center, CCCPC ed., *Collected Works of Mao Zedong*, Volume VI (Beijing: People’s Publishing House, 1996), p. 500 [毛泽东, “在资本主义工商业社会主义改造问题座谈会上的讲话”, 1955年10月29日, 《毛泽东文集》, 第六卷, 人民出版社1996年。]

⁶ “The American Officials in Panic; They Admitted Loss in Satellite Race,” *People’s Daily*, October 7, 1957.

⁷ “The Soviet Satellite Broke the Theory of Western Superiority; The US and Great Britain Had No Choice But Acceptance,” *People’s Daily*, November 12, 1957.

Chairman Mao's conclusion was that a satellite could force the Western countries, especially the United States to treat China equally. In the Second Plenum of the Eighth Party Congress that opened in 1958, Chairman Mao proposed that "China will produce our own satellite too."⁸ This marked the first time that the Chinese government publicly declared a satellite plan.

As mentioned above, Chairman Mao was at the time facing a foreign policy dilemma. He desired to return China to international society, but only if it could be done so with dignity; he knew China needed the help of the Soviets, but more and more disagreed with Khrushchev's anti-Stalin policy and his détente with the West. Nevertheless, "of two evils choose the less"—Chairman Mao was quite clear that China could not afford to fight two powerful enemies at the same time. Besides, there was still room left for China and the Soviet Union to negotiate. As a matter of fact, the Sputniks temporarily forestalled the deterioration of the Sino-Soviet relationship.

On November 2, 1957, Chairman Mao arrived at Moscow airport, and was warmly welcomed by Khrushchev. This was his second and last time journeying outside of China.⁹ Mao's visit came at the request of Khrushchev in celebration of the fortieth anniversary of the Bolshevik Revolution. The 1956 turbulence within the socialist bloc countries and the political conflict of Russian high-level leaders¹⁰ had seriously weakened Khrushchev's position both in Russia and in the Communist movement. As a result, Mao's arrival would help to support and strengthen Khrushchev's political position. Mao did not disappoint Khrushchev. In a speech at the Moscow Celebration Meeting, he expressed publicly the respect from China, "Our socialist camp must have a leader, and that leader is the Soviet Union. If we do not have a leader, our forces might disintegrate!"¹¹ On another occasion he declared, "We, China, cannot be the head. We are not qualified; we have [too] little experience. We lack experience in revolution, and we also lack experience in construction... We have not sent up even half a satellite... There were some unpleasant things in the relationship among the Communist parties of various countries in the past... Nonetheless, I suggest that we must look at the big picture... Without the Soviet Union, we could all be swallowed up by others."¹²

Of course there were reasons for Chairman Mao to be so supportive to Khrushchev. Making up the rising fissure between China and the Soviet Union was one of them. Getting something in return from the Russians was another one. Before Mao's visit, a Chinese delegation led by vice premier Nie Rongzhen had been in Moscow for a couple of months. The delegation's task was to develop an arrangement with the Soviets on nuclear technical assistance to China. Heretofore China's appeal had been refused by Khrushchev under the excuse of a reliable Russian nuclear umbrella. However, the difficulties that Khrushchev was facing compelled him to yield to China. According to Chinese high-level leader Song Renqiong, who was vice head of Marshal Nie's delegation, the Chinese ambassador in Moscow Liu Xiao told him in person, "Khrushchev is in great

⁸ Zhang Jinfu, "How the Chinese First Satellite Was Launched into Orbit?" *People's Daily*, October 17, 2006.

⁹ Mao was emotionally resistant to going abroad. So his trip was a big gesture of sympathy and support to Khrushchev.

¹⁰ In February 1957, Khrushchev was barely ousted by his political rivals, led by Georgy Malenkov and Vyacheslav Molotov. Though he successfully overthrew them with the help of General Georgy Zhukov, his reputation was damaged extraordinarily.

¹¹ Mao Zedong, "Speech to Chinese Students and Trainees in Moscow, November 17, 1957," in Party Literature Research Center, CCCPC ed., *Manuscripts of Mao Zedong since the Founding of P.R.China*, Volume VI (Beijing: Central Party Literature Publishing House, 1992), p. 650.

¹² Mao Zedong, "Speech at the Congress of Communist Parties and Workers' Parties in Socialist Countries, Nov 14, 1957," in Mao Zedong, Michael Y. M. Kau, John K. Leung, *The Writings of Mao Zedong, 1949-1976*, Volume II (M.E. Sharpe, 1992), p. 768.

trouble. He asks for Chairman Mao's coming. The embassy suggests accepting his request."¹³ This might well be the reason behind Mao's Moscow trip. As Mao reiterated several times in Moscow, "The whole world acknowledges that the success of the Soviet Union in launching the man-made earth satellites has opened up a new era in the conquest of nature by man."¹⁴ He expected China could also benefit from this new technical development. In one way or another, his trip was rewarded. On 20 August 1957, China and the Soviet Union signed an agreement termed *the New Defense Technical Accord 1957-58*, which was ratified on October 15. In this pact, the Soviet Union agreed to provide missile samples and technical documentation, and to send technical experts to China.¹⁵

¹³ Song Renqiong, *Song Renqiong Memoir* (PLA Publishing House, 2007), p. 341. [宋任穷：《宋任穷回忆录》，解放军出版社2007年。]

¹⁴ Mao Zedong, "Speech at Moscow Celebration Meeting, Nov 6, 1957," in Party Literature Research Center, CCCPC ed., *Manuscripts of Mao Zedong since the Founding of P.R.China*, Volume VI, p. 616.

¹⁵ Yanping Chen, *China's Space Activities, Policy and Organization, 1956-1986* (PhD dissertation: George Washington University, 1999), AAT 9931130, p. 70.

PART THREE

China's Early Space Exploration and the American Government's Reaction towards It

From 1956 to 1970, China's space exploration experienced great turbulence and confusion. It could be divided into three stages: a great leap forward through 1959, then standstill until 1965, and finally success amidst turmoil to the end. During the same period, the American government kept a close eye on the Chinese space program. Restricted by intelligence sources and by the cold war environment, US evaluations and reactions to the Chinese space program were exaggerated, and generally characterized by serial overreaction.

A Great Leap Forward for China's Satellite Plan (1956-1959)

China's space exploration officially began with Chairman Mao's call to action in the Second Plenum of the Eighth Party Congress (1958). In that conference, Chairman Mao once again expressed his resolution to overtake the United States in space exploration. "A few months ago, the United States launched its satellite into space. Then, what should we do? China will produce our own satellite too. Furthermore, our satellite must be bigger, at least ten or twenty thousand kg. We will never send up a satellite the same size as an egg, like what the US has done."¹

China's space effort was fueled by the optimistic anticipation of Chairman Mao and the enthusiasm of the masses. For a long time, Chairman Mao betrayed a persistent feeling of being humiliated by the United States. The Soviet satellite showed a bright future of changing fate for China. When he was in Moscow, Chairman Mao excitedly observed, "The direction of the wind in the world had changed. In the struggle between the socialist and capitalist camps, it was no longer the West wind that prevailed over the East wind, but the East wind that prevailed over the West wind."² As soon as he returned to China, Chairman Mao immediately declared the intention of launching a Chinese satellite, at the same time that he instigated a social movement aimed at catching up with the United States. The so-called Great Leap Forward placed emphasis on accelerating economic development by all means. Every breakthrough in output of product was metaphorized into a satellite launch. This movement in 1958 caused disastrous consequences for agriculture and industry.

The same fanaticism appeared in the field of advanced science. After Chairman Mao's speech, all of the related institutes and agencies acted quickly. Under the directive of Marshal Nie, who was then Vice Premier for Science and Technology and in charge of the newly established Committee of Science and Technology for National Defense (COSTND), the Fifth Academy and the Chinese Academy of Sciences (CAS) convened a couple of joint meetings to bring forward a satellite plan.³ According to Zhang Jinfu, the ex-vice president of CAS, the satellite plan was submitted in July 1958. It laid out a three-step space exploration blueprint: developing sounding rockets first, then launching small satellites and in the final phase, large satellites. Their

¹ Peng Jichao, *National Strategy: Records of Chinese Space Program* (Shanghai Literature and Art Publishing House, 2005) [彭继超:《国家战略——中国载人航天工程纪实》,上海文艺出版社2005年。]。

² Mao Zedong, "Speech to Chinese Students and Trainees in Moscow, November 17, 1957."

³ Zhang Jinfu, "How the Chinese First Satellite Was Launched into Orbit?"

ambitious goal was to launch a Chinese satellite within three years.⁴ Later on, influenced by the atmosphere of Great Leap Forward, they even announced that the aim would be research and production of a high-energy launch vehicle and heavy satellite within a couple of years.⁵ The Politburo of the Communist Party of China (CPC) appropriated 200 million RMB (*renminbi*, or Chinese yuan) for the first satellite program. Considering the poverty and leanness of China during the 1950s, this amount of money could well be depicted as a vast investment. The satellite program was assigned to the CAS. It formed a small task group, code named Project 581, which meant that this project was to be the primary task of 1958.

In this period, China had two advantages in hand, which could contribute to a Chinese satellite program. One was a group of scientists trained by American and European countries who returned to China after 1949. Among them, Dr. Qian Xuesen was representative but not unique. He was famous in China's cause of space exploration partially because of his professional background, partially because of the strategy of propaganda, under which he was set up as a political model. There were more "Secret Heroes" behind China's space exploration such as Yang Jiayi, who graduated from Harvard University, Ren Xinming from University of Michigan, Wang Xiji from Virginia Polytechnic Institute (Virginia Tech), and Yao Tongbin from University of Birmingham in Great Britain. The other advantage that China had was assistance from the Soviet Union. Right after Mao's 1957 visit, the Russians abided by the Technical Accord very well. On December 24, they shipped two P-2 rockets and supporting equipment to the Fifth Academy, and a great number of Soviet experts were sent to China.⁶

Even though there were advantages in China's space exploration, it was technically premature to achieve such lofty goals within three years. Also, the Great Leap Forward had some negative impacts on China's space program. Many responsible leaders, even many scientists, could not stick to the true scientific principles—say, the laws of economics and the laws of science—under the very special political situation of the time. There appeared wide-spread boasts and exaggerations in China.⁷ Furthermore, at the end of 1958, the consequences of the Great Leap Forward emerged. Natural disaster as well as factitious factors caused serious food shortages and economic problems. To make things even worse, the Soviets terminated their help to China's high-tech programs. In June 1959, the Soviet Communist Party Central Committee sent a letter to the CPC Central Committee notifying it that they would terminate some programs between the two states, and the Soviet experts began to leave China under high-level Soviet directives.⁸ Early in 1959, Secretary General Deng Xiaoping admitted by speaking to the representatives of CAS that "developing a strong satellite program lay outside China's immediate capabilities."⁹ As a result, the satellite project had to be suspended in 1959.

From 1956 to 1959, the United States and China were in a completely hostile relationship. To China, the

⁴ Zhang Jinfu, "How the Chinese First Satellite Was Launched into Orbit?"

⁵ Zhang Jun et al. ed., *Space Exploration of Contemporary China*, p. 28.

⁶ Zhang Jun et al. ed., *Space Exploration of Contemporary China*, p. 562.

⁷ In recent years, more and more Chinese people have joined the discussion about what Dr. Qian Xuesen had done during the Great Leap Forward. Dr. Qian might be the first person to argue based on scientific research that the maximum output of grain product could be 20,000 kilograms per acre (44,000 pounds per acre). See Qian Xuesen, "How Much Grain Output Could Be Achieved Per Mu?" *China Youth Daily*, June 16, 1958 [钱学森, 粮食亩产量会有多少? 《中国青年报》, 1958年6月16日。].

⁸ Nie Rongzhen, *Nie Rongzhen Memoir* (Beijing: People's Liberation Army Publishing House, 1984), pp. 806-809.

⁹ Zhang Jun et al. ed., *Space Exploration of Contemporary China*, p. 12.

United States was an evil imperialistic country that prevented China from liberating Taiwan, and isolated China by economic embargo and political containment. To the United States, Communist China was attempting “to expand its power on the mainland of Asia and to expel US power and influence therefrom.”¹⁰ In the context of the cold war, both the Communist bloc and the Western alliances tried to influence less developed countries by means of economic progress and technical achievement. The US government had been worrying about China’s economic improvement, a point reflected in US National Security Council (NSC) documents at the time: “Communist China, if its industrialization continues as expected at a rate relatively rapid as compared with that of other Asian countries, will exert considerable attractive force on Asian peoples.”¹¹ Likewise, there was a perception among US leadership that if China became the third nation to conquer outer space, there would be a negative impact on US influence in Asia. Moreover, the West had been defeated once in the space race. The US government could not afford a second loss in this special battlefield of the cold war.

Compared with the United States and the Soviet Union, China’s space technology was extremely backward, especially in the 1950s. Consequently, many historians believed that, with respect to the launch of Sputnik I, “no one in the West had paid much attention to China’s response.”¹² As a matter of fact, however, the American government examined China’s reaction early on, and began to work out a policy on it. Only six days after the launch of Sputnik I, Allen Dulles, Director of the Central Intelligence Agency (CIA), observed in a National Security Council meeting that “the Chinese Communist reaction was to declare quickly that the launching of the earth satellite was proof of Soviet military and scientific supremacy over the United States.”¹³ Beginning in early 1958, US spy airplanes began their overflying over Chinese territory mainly aimed at observing China’s nuclear, missile, and space infrastructure.¹⁴ In August 1958, President Dwight D. Eisenhower received an intelligence evaluation from Brigadier General A. J. Goodpaster, Staff Secretary. It deemed that “Khrushchev and Mao may have agreed to launch an earth satellite from China on October first.”¹⁵

Afraid of a Chinese attempt to launch a satellite before any Western countries, on July 9, 1958, the Operations Coordinating Board (OCB) under the request of the National Security Council started to prepare a report to “outline courses of action in the event that the Chinese Communist Government was successful in launching an earth satellite.”¹⁶ Within less than one month, the OCB came up with an idea. The board members agreed that “it would be advisable to begin examining ways, including technical assistance and equipment in which the US could best assist a friendly country or countries in launching a scientific space vehicle or vehicles.”¹⁷ The OCB suggestion was confirmed by NSC 5814/1, which is the first comprehensive policy statement on Outer Space, signed by Eisenhower on August 18, 1958.¹⁸ According to NSC 5814/1, “the

¹⁰ Basic National Security Policy Documents of NSC, Jan. 6, 1955, in Declassified Documents Reference System (hereinafter cited as DDRS), CK3100192103, p. 5.

¹¹ Basic National Security Policy Documents of NSC, Jan. 6, 1955, in DDRS, CK3100192103, p. 3.

¹² Brian Harvey, *China’s Space Program: From Conception to Manned Spaceflight*, p. 25.

¹³ Discussion at the 339th Meeting of the National Security Council, Oct 10, 1957, available at <http://history.nasa.gov/sputnik/oct57.html>.

¹⁴ Brian Harvey, *China’s Space Program: From Conception to Manned Spaceflight*, p. 32.

¹⁵ Synopsis of intelligence and DOS items reported to Eisenhower, White House, Aug 19, 1958, in DDRS, CK3100233349.

¹⁶ Operations Coordinating Board course of action in the event that China is successful in launching an Earth satellite, Sep 19, 1958, in DDRS, CK3100114141, p. 1.

¹⁷ *ibid.*

¹⁸ Department of State, *Foreign Relations of the United States 1958-1960* (hereinafter cited as FRUS), vol. II (Government Printing Office, 1991), pp. 845-863.

launching by Communist China of an earth satellite would tend to enhance the prestige of the Chinese Communist regime throughout Asia and among the less-developed countries, and could further undermine the reputation of the West for technological leadership unless the accomplishment were matched by a Free World ally.”¹⁹

In the following months, OCB talked further about which state should be selected to launch a satellite through US assistance, in order to compete with China in the Race for Third in Space. In selecting a state to receive assistance with a satellite launch, the US government hesitated between Britain and Japan for quite a while. Great Britain was technically capable of launching a satellite vehicle. Yet it was felt that in responding to a British satellite, “the Asians would feel less sense of identification with the project.” Japan was politically suitable for balancing China in Asia: “It would be politically advantageous to encourage Japanese scientific attention to this field. In addition to enhancing Japanese scientific prestige as a counter to such prestige as the Communist Chinese may gain, US-Japanese outer space scientific cooperation would promote Japanese understanding of the need for advanced weapons and reduce popular misgivings over rockets and missiles.” However, even if aided substantially by the United States, “[Japan] could not launch a missile from its own soil for more than two years.”²⁰ Since they predicted China would launch a satellite soon, the OCB assistants finally decided to cooperate with the United Kingdom for a satellite launching project.²¹ But when China’s economic difficulties and technical incapacities showed in 1959, the cooperation between the United States and Great Britain slowed down.

From Feast to Famine: The Space Projects Stall (1959-1965)

The three famine years (1959-1961) caused by the Great Leap Forward seriously damaged China’s economy, and resulted in extreme shortages of all kinds of resources. Many scientists and high level leaders who survived those difficult years recalled that, to ensure the smooth progress of advanced technical research, Marshal Nie had to write letters in person to military leaders to ask for special supplies of meats and fruits for those important scientists.²² Mainly thanks to his failure in economic policy, Chairman Mao was in his semi-retired situation (1959-1966), but he was still very powerful and involved in almost every major decision. Meanwhile, on a parallel level, President Liu Shaoqi and General Secretary Deng Xiaoping embarked on their work on economic adjustment. Many disagreements on the future of the space program existed within Chinese high level leadership. Should certain space projects continue or not? What would be the short-term and long-term objectives of the space program? Should it be explored based on Chinese indigenous efforts or should China try to find help from other countries?

Since 1960, the Chinese development of advanced military technology, including the space program, had

¹⁹ Department of State, *FRUS 1958-1960*, vol. II, p. 846.

²⁰ Operations Coordinating Board course of action in the event that China is successful in launching an Earth satellite, Sep 19, 1958, in DDRS, CK3100114141, p. 5.

²¹ Operations Coordinating Board Weekly Activity Report of 9/29/58, in DDRS, CK3100118089. Another reason for not choosing Japan as an alternative was its political vulnerability. The US government was afraid of negative responses from certain Asian allies for aiding Japan in a satellite launch.

²² Bo Yibo, *Reflection on Certain Critical Decisions and Events* (Central Party School Press, 1991), pp. 1001-1002 [薄一波著：《若干重大决策与事件的回顾》（上卷），中共中央党校出版社1991年。]。

never been so closely related with foreign relation issues. The Sino-Soviet split became more and more public. Compared to China, the Soviet Union held a more flexible policy towards the West, which compelled China into an even more difficult and isolated situation. Sino-US relations during this period plunged to the bottom of the well. As before, most Chinese Communist leaders, including Chairman Mao, believed China's position resulted from backwardness. Once again, Chairman Mao in a speech emphasized, "From the 1840s to the 1940s, during [a span of] 105 years, China was invaded and bullied by all the large or small imperialist countries in the world...there are two reasons for this humiliation: one is a corrupted social system; the other is economic and technical backwardness. Now, the social system has changed, but the economy and technology still lag behind other countries." In the same speech, he called on his fellow Chinese "to break the routine, try our best to overrun imperialist countries before the passage of much more time."²³ So, even though China faced serious difficulties in those years, the CPC decided to continue the large-scale research and development of advanced technology. In a conference held at Be Dai He in July 1960, after days of argument and debates, the view of supporting the continuation of the space program prevailed.²⁴

Nevertheless, under the general policy framework of accelerating advanced technology, there were still problems concerning the Chinese space program. For one thing, taking account of the practical military threat from both the Soviet Union and the United States, the nuclear and missile programs obviously enjoyed much more priority than the space program. To deter a Russian assault from the Sino-Soviet border, and to fight a possible battle with the Nationalist Army backed by the United States, the importance of nuclear and missile programs became apparent. As former Foreign Minister Chen Yi jokingly stated: "We will do what it takes to support the nuclear bomb and missile programs, even if this means we can't afford to wear pants! As Minister of Foreign Affairs, I need these programs to back me up in my foreign policy formulation."²⁵ Meanwhile, the experiences and lessons learned during the Great Leap Forward had suggested to Chinese scientists that it was premature to launch a satellite, especially without the help of the Soviets. On March 21, 1962, the launch test of the first missile designed by Chinese scientists crashed near the launch pad, which further slowed down China's space program.

In short, during the period of 1959-1965, China's space program was at its low tide, limited only to research and testing of a sounding rocket. Marshal Nie designated the sounding rocket task to CAS in mid-1961, and instructed them to do further research directed to a spacefaring nation.²⁶ China had to concentrate its limited resources to advanced weapon systems amidst the economic setbacks. Most national efforts were allocated to nuclear and missile programs. China's space technology needed more time to mature. Nevertheless, even though the program progressed slowly, Chinese space scientists and engineers did gain a lot of experience through hard work, which provided necessary technical preparations and benefited a renewed satellite program in the end.

Meanwhile, the US government kept on tracking China's space program in this time period. Although

²³ Mao Zedong, "Building China into a Modernist Socialist Power, September 1963," *Literature of Chinese Communist Party*, January 1996.

²⁴ Yanping Chen, *China's Space Activities, Policy and Organization, 1956-1986*, p. 78.

²⁵ *ibid.*, p. 74.

²⁶ "Concentration on Accelerating the R&D of Ground-to-ground Missile, June 2, 1961," in *Selected Military Works of Nie Rongzhen* (Beijing: PLA Publishing House, 1992), p. 448. ["集中力量加速研制地对地导弹", 1961年6月2日, 《聂荣臻军事文选》, 北京: 解放军出版社1992年。]

reconnaissance satellites had been used to spy on the other side of the Iron Curtain since 1960, the US intelligence community was still very unsure about the authenticity of the information they acquired. A National Intelligence Estimate (NIE) in 1962 observed correctly that “the Chinese have expressed interest in launching an earth satellite, but there is no evidence of such a program...It is possible that the Chinese will produce and launch upper atmosphere sounding rockets in the next few years.”²⁷ But only one year later, a NIE issued in July 1963 predicted that “the Chinese might well use a prototype MRBM [medium-range ballistic missile], with one or more additional stages, to place a satellite into orbit.”²⁸ Fear of a “space surprise” from China plus insufficient intelligence capabilities once again endowed the US evaluation towards China’s space program with a tendency towards exaggeration.

In 1962 and 1963, China’s nuclear program was about to obtain breakthrough. The United States worried about this development, but mainly from a political not military point of view. A telegram from the American Embassy in Taipei cited Taiwan Secretary General Chang Chun (Zhang Qun) as saying that “CHICOM [Chinese Communist] explosion of Nuclear Device had very little effect upon military situation. However, it would have an important political and psychological effect with the GRC [Government of the Republic of China] and throughout Southeast Asia.”²⁹ The 1963 NIE mentioned above also identified the purpose of a Chinese satellite, asserting that it “would be to give the impression of much greater strength than had actually been acquired and to persuade the people of neighboring countries that Peiping [Beijing] was riding the wave of the future which it was futile to resist. At the same time Peiping would work to persuade audiences in other under-developed countries that Chinese-style Communism provides the most effective and rapid way to become a modern industrial, scientific, and military power.”³⁰ It was because of this kind of consideration that the American policy maker attempted to neutralize China’s position in advanced technical fields by propping up one or more other Asian states to develop space programs. In September 1962, Governor William Averell Harriman, the US representative to the UN, suggested to Japanese Foreign Minister Masayoshi Ohira that “it would be desirable for Japan to demonstrate some achievement in the space field before the Chinese Communists explode their first nuclear device,” and expressed the hope that “the United States could put a Japanese satellite in orbit.”³¹ Nevertheless, according to the documents, the Japanese government was not particularly interested in this suggestion, although extensive cooperation had existed between Japanese and American space scientists.³²

Ironically, the Chinese government knew quite well of all these US concerns, and took advantage of them politically. Marshal Nie in a conference for military industry leaders said, “All the imperialists and reactionaries are concerned about the possession of nuclear and missile capabilities by the Chinese people. They worry about it because their blackmail to the world would come to an end, once China obtained the nuclear weapon and

²⁷ NIE13-2-62, April 25, 1962, available at http://www.foia.cia.gov/nic_china_collection.asp.

²⁸ CIA report on Communist China’s advanced weapons program, Jul 24, 1963, in DDRS, CK3100130607.

²⁹ Am Emb Taipei, Telegram No. 381. 2 Sections. Nov. 7, 1964, in DDRS, CK3100360326.

³⁰ CIA report on Communist China’s advanced weapons program, Jul 24, 1963, in DDRS, CK3100130607.

³¹ Secretary’s Delegation to the 17th Session of the United Nations General Assembly, Memorandum of Conversation, September 24, 1962, in Digital National Security Archive (hereinafter cited as DNSA), JU00172.

³² The reasons might be: first, the Sino-Japanese unofficial friendly relationship; and second, the Japanese government considered that China’s possible nuclear explosion only had a psychological meaning.

rocket weapon.”³³

Of Revolutions Technological and Cultural: Successful Launch, Social Turmoil (1965-1970)

The mid 1960s were crucial years for China both at home and abroad. Domestically, the Chinese economy recovered steadily under the direction of Liu Shaoqi and Deng Xiaoping. China’s nuclear and missile programs achieved great success in 1964 and 1965, which dramatically promoted China’s capability of deterrence. Meanwhile, the potential political rivalry among high-level CPC members was about to burst out. The ten-year Cultural Revolution led by Chairman Mao was on its way to the stage. Internationally, the Sino-Soviet split gradually became public. On the other side, the Soviet-US relationship after the 1962 Cuban Missile Crisis tended to be stable.³⁴ Owing to the situation in Vietnam and China’s revolutionary foreign policy (that is, its efforts to export Communist revolution), the US government’s attention shifted from Europe to Asia. Some high level-officials in the Lyndon B. Johnson administration believed that “the Chinese have shown themselves to be more aggressive than the Soviets...The Chinese are more reckless than the Soviets.”³⁵ Consequently, the Sino-US relationship was even worse than before. It was in this environment of great turmoil that China’s first satellite was launched into orbit.

After almost six years of preparation, leading space scientists such as Qian Xuesen, Zhao Jiuzhang, and Qian Ji deemed that the technical conditions for a Chinese satellite had reached maturity. Beginning in early 1965, they successively submitted proposals and suggestions on the satellite project to the Central Committee of the CPC, and drew much attention from the decision-makers. In July 1965, a proposal titled “A Plan for the Development of China’s Artificial Satellites,” drafted by CAS, received full evaluation. The Central Special Committee³⁶ chaired by Zhou Enlai soon approved this proposal. From that time forward the satellite program became a national priority and was put into the annual agenda of related institutes and ministries. CAS took the responsibility of developing an artificial satellite.³⁷ It was once again classified the first major task of this institute, which was coded Project 651. The newly established Ministry of Seventh Machinery Industry took the responsibility for developing the launch vehicle. In a joint meeting held by the Commission of Science and Technology for National Defense (COSTND), CAS, and the Ministry of Seventh Machinery Industry in May 1966, participants discussed the objective and rationale of the projected satellite, and named the artificial satellite DFH-1 (*Dongfanghong*, or East is Red), and the launch vehicle CZ-1 (*Changzheng*, or Long March).³⁸

Research and development of DFH-1 and its launch vehicle CZ-1 began in late 1966. Meanwhile, the Cultural Revolution launched by Chairman Mao soon spread to the field of advanced science and industry. It

³³ “Speech on the Conference of Military and Industrial Cadre, April 2, 1963,” in *Selected Military Works of Nie Rongzhen*, p. 496; p. 498 [“在军工领导干部会议上的讲话”, 1963年4月2日, 《聂荣臻军事文选》。]。

³⁴ According to Governor Harriman, “The Soviet Union since Cuba in October 1962 has stopped threatening nuclear war. The Soviet Union has tried to isolate Communist China.” See Memorandum of Conversation, June 4, 1964, in DNSA, JU00326.

³⁵ Memorandum of Conversation, June 4, 1964, in DNSA, JU00326.

³⁶ Established in 1962, the CSC became fully in charge of China’s nuclear industry and nuclear weapon R&D.

³⁷ After 1968, the task was handed over to the newly established Fifth Academy of the Ministry of Seventh Machinery Industry, also known as the Chinese Academy of Space Technology (CAST).

³⁸ Zhang Jun et al. ed., *Space Exploration of Contemporary China*, pp. 40-41; From the Fifth Academy of the National Defense Ministry to the Ministry of Seventh Machinery Industry—Interviewing General Wang Bingzhang on China’s Space Enterprises, *General Review of the Communist Party of China*, March 2005. [从国防部五院到七机部——王秉璋将军谈中国航天事业, 《党史博览》2005年第3期。]。

was difficult to evaluate the unfavorable influence of the Cultural Revolution on the space program. The general belief is that the satellite project and its research personnel were very well-protected by Premier Zhou and Marshal Nie, and that almost all the high-level leaders responsible for the satellite project were enthusiastic backers of the space program, including the Gang of Four and the Minister of Defense Lin Biao (also known as Mao's successor).³⁹ The reality is that there was much suspicion about the practical meaning of the space program, power conflicts over the control of the program, and many sad stories behind China's first satellite. Premier Zhou did try his best to intervene in the frequent cases of persecution against space scientists by the Red Guard or the Rebels. He even put the Institute of Space Research of CAS under the control of the military to avoid full paralysis of the satellite research. Nevertheless, there were still many outstanding space scientists who died during the Cultural Revolution. The most famous among them were Zhao Jiuzhang and Yao Tongbin.⁴⁰ Even more scientists were thrown into the so-called Cow Barn, or forced to do hard labor and political study every day. The nationwide turmoil during the Cultural Revolution severely interfered with the development of the space program. As a result, compared to the 1965 design, the first Chinese satellite launched into space in 1970 was dramatically simplified.⁴¹ It did survive the Cultural Revolution, but it became a political satellite with very limited technical contributions. More importantly, the first Chinese satellite lagged behind the French and Japanese satellites, which meant in some sense China had lost the Race for Third in Space, and was defeated by Japan in the national prestige battle.

Whatever happened, China's first satellite program survived the great social turmoil of the Cultural Revolution. Mao's dream—a strong China demonstrating its capability in the space arena—came into being. Furthermore, China after all was the first among less-developed countries to launch its own satellite, thereby exhibiting definite military capability. So, one should not dismiss the achievement and influence of the first Chinese satellite.

The process of developing China's first satellite once again demonstrated the political dilemma Chairman Mao faced during the Cultural Revolution. Though there was no direct evidence of Mao's enthusiasm for the space project during this period—probably due to his complete preoccupation with the political struggle—he did sign major documents related to the satellite program, and approved the launch of DFH-1. By late 1968, Chairman Mao's attitudes toward the space program subtly changed due to the international situation. Before 1968, Chairman Mao generally supported the satellite program, but nothing was more important in his mind than the political struggle at hand. Throughout this period from 1966 to 1968, it seemed that Mao's single word could protect thousands of scientists from persecution, but he refused to so intercede on their behalf. On the contrary, he publicly reiterated now and then not to interfere with actions of the Rebels. As far as Chairman Mao's real concern, the Chinese people's revolutionary spirit and their socialist orientation were the first major issues. The contradiction of Mao's political philosophy was fully exhibited by a famous quotation during the Cultural Revolution: "The satellite launches into space, while the red flag falls to the ground." This was a

³⁹ Yanping Chen, *China's Space Activities, Policy and Organization, 1956-1986*, p. 83.

⁴⁰ Li Mingsheng, "The Death of Zhao Jiuzhang," *Wen Hui Bao*, August 16, 2004. [李鸣生, 赵九章之死, 《文汇报》2004年8月16日。]

⁴¹ Hu Ping, "Under the Shadow of Flame Trees—The Hidden Story Behind Chinese First Man-made Satellite," *Tong Zhou Gong Ji*, Feb 2008. [胡平, 美丽凤凰木的阴影里——我国第一颗人造卫星上天背后的故事, 《同舟共进》2008年第2期。]

conclusion of lessons the Chinese leftist drew from the Soviet experience. Based on Mao's thoughts on world revolution, socialist countries must first and foremost stick to the revolutionary course to fight capitalism both at home and abroad, and then pursue promotion of economy and technology. This was especially the case before 1968, when Mao felt he was besieged by the Rightists, Capitalists, and Revisionists.

However, Chairman Mao's thoughts changed again after 1968. Though China was still sinking into disorder, Mao had defeated his major political enemies, and firmly controlled the CPC. At the same time, the international situation—especially China's border security and the situation in the Vietnam battleground—drew his attention. Beyond that, the Soviets' invasion of Czechoslovakia in July 1968 startled Chairman Mao, which inevitably reminded him of the devastating Sino-Soviet relationship and the constant border conflicts between the two states since 1964. In late 1968, a new phrase—"Soviet Revisionist Social-Imperialism"—frequently appeared in many Chinese newspapers.⁴² And in early 1969, the Zhenbao island (treasure island) conflict with the Soviet Union soon came to the stage. From then on, the Soviet Union rather than the United States became the first major enemy of China. Once again, the space program showed its value as a political and foreign policy tool. For one thing, it would become a symbolic exhibition of China's advanced weapon systems if it succeeded; for another, it might be a useful bargaining tool to facilitate a new foreign policy, which was under consideration by Chairman Mao. Obviously, a Chinese satellite would demonstrate that China was strong enough to be one of the points in a Sino-Soviet-US triangle. Therefore, in 1969, when the Ministry of Seventh Machinery Industry was testing the conversion of Dongfeng 4 to Long March 1, Premier Zhou stated forcefully that the testing was not to be interrupted by political struggles.⁴³ Considering Zhou's relationship with Mao, his action was obviously under the acquiescence of the latter. Furthermore, the national defense outline during the Fourth Five-Year Plan drafted and confirmed by then Minister of Defense Lin Biao in early 1970 laid out a very ambitious space project, which proposed that China should develop fourteen spacecrafts within five years, and launch nine satellites per year.⁴⁴

Meanwhile, due to the extraordinary chaos in China, the US government's evaluation of China's space program in this period swung dramatically. In a CIA special report issued in July 1965, the analyst who drafted the report predicted, "The Chinese plan to orbit a satellite and one specifies the date as 1 October 1965." He also believed that "even though the evidence is fragmentary, China should be regarded as another country which might orbit a satellite within the next two years."⁴⁵ Even two years later, after the social turmoil of the Cultural Revolution had been widespread in China, US intelligence still insisted China would launch its satellite within two years,⁴⁶ and that "the Chinese advanced weapons program (nuclear weapons and delivery systems) does not appear to have been affected by the Cultural Revolution."⁴⁷

Based on this assumption, the US government resumed its efforts to build up regional balance by

⁴² "Diabolical Social-Imperialist Face of the Soviet Revisionist Renegade Clique," *Peking Review*, Vol. 11, Oct. 25, 1968, pp. 8-10; "The Real Features of the Soviet Revisionist Social-Imperialist Exposed," *People's Daily*, Nov. 16, 1968.

⁴³ Qian Xuesen, "Thanks, Memory and Wishes"; see also Yanping Chen, *China's Space Activities, Policy and Organization, 1956-1986*, p. 98.

⁴⁴ China's Missile Defense Program and ASAT Program, available at http://www.cgw.cn/tspd/C_tspd_tsnr_cgw_book_info_254699.html.

⁴⁵ Report, Central Intelligence Agency, Jul 23, 1965, in DDRS, CK3100507724.

⁴⁶ SNIE 13-8-66, Communist China's Advanced Weapons Program, Nov 3, 1966; NIE 13-8-69, Communist China's Strategic Weapons Program, Feb 27, 1969, available at http://www.foia.cia.gov/nic_china_collection.asp.

⁴⁷ NATO Ministerial Meeting, Luxembourg, June 13-14, 1967, in DDRS, CK3100401396, p. 5.

supporting Japan and India. From 1964 onwards, the administration of Prime Minister Eisaku Sato of Japan had adversely changed its friendly policy towards China. Compared to ex-Prime Minister Hayato Ikeda, Sato's China policy was harder and tougher. Also, unlike Ikeda's indifference to the US suggestion, Sato was very actively engaged in the efforts to beat China in the space race. In late 1964, Prime Minister Sato told American Ambassador Edwin O. Reischauer that he favored orbiting a Japanese satellite to demonstrate Japan's scientific leadership in Asia and to undercut the psychological effects of the Chinese Communist nuclear explosion.⁴⁸ In early 1965, Sato visited the United States. He told President Johnson in person that "Japan was anxious to further space developments. It aspired to be number three, after the United States and the USSR, in the field."⁴⁹ President Johnson was surely glad to hear about this, and he promised "the US was prepared to cooperate with Japan and to be as helpful as we can in space developments."⁵⁰ US-Japanese space cooperation expanded from that point forward.

Relations between India and the United States were more complicated than US-Japanese relations, considering the historical rivalry between the two states. Nevertheless, India's resources, its location, and its anti-Chinese tendency would be very helpful to America's New Asian Strategy.⁵¹ Beginning in 1966, US scientific-technical cooperation with India was dramatically expanded. According to an anonymous letter to the Atomic Energy Commission, US-Indian cooperation in nuclear and outer space fields was very extensive. The US government was even thinking of helping India to orbit a satellite.⁵² The US-Indian cooperation drew attention from China. The Xin Hua News Agency vehemently criticized US support of the Indian space program as reflecting anti-China policy.⁵³

⁴⁸ Visit of Prime Minister Sato, January 11-14, 1965, Background Paper, January 6, 1965, in DNSA, JU00417.

⁴⁹ Memorandum of Conversation, January 13, 1965, in DNSA, JU00449.

⁵⁰ *ibid.*

⁵¹ It refers to the strategy to create a much broader Asian political base, encompassing a majority of the non-Communist Asians, towards the gradual development of an indigenous Asian counter-balance to China. Memorandum, Department of State, Nov 10, 1965, in DDRS, CK3100494846.

⁵² Memorandum, Atomic Energy Commission, Jun 13, 1965, in DDRS, CK3100077528.

⁵³ "The New Military Collusion of US, USSR, and India; Three Countries' Satellite Activities In India," *People's Daily*, Feb 5, 1968. [美苏印进行新的军事勾结, 三家合伙在印度搞发射卫星等活动, 《人民日报》1968.02.05。].

PART FOUR

For Further Consideration

The first Chinese satellite was launched into orbit on April 24, 1970, following the first French satellite in November 1965, and the first Japanese satellite in February 1970. Thanks to the delay, the Chinese satellite aroused relatively little response. By that time, a policy of changing its stance towards China was already under consideration by the Nixon Administration, so US reaction to the Chinese satellite was nothing more than emphasis of “the consistent US position favoring the peaceful exploration of outer space.”¹ Nevertheless, as the above discussion has demonstrated, dating back to the 1950s and 1960s, Sino-US interactions in the field of space program development was extraordinarily complicated, and worthy of further study and discussion.

Rationales for China’s Space Program and the “American Factor”

Scholars have laid out some common ground with respect to rationales for human space exploration in the early space age, mainly drawn from the experiences of the Soviet Union and United States. These rationales are as follows: 1) national pride or national prestige; 2) national security; 3) expansion of scientific observation; 4) social and economic values; 5) national power; and 6) special interests and ulterior motives.² However, considering the motives behind China’s satellite launch in 1970, there should be more rationales for space exploration added to the spectrum. These additional rationales are not only fit for such states as China and India who pursue space capability under undeveloped domestic economic situations, but also such states as China, Iran, and North Korea who are bitterly opposed or contained by the Western countries.

There are many disagreements over the rationales for China’s early space program. Some scholars have confused the early Chinese space program with its missile program, and drew the conclusion that “the premier rationale of the 1956-1966 period is strengthening national defense.”³ To be certain, the missile program was closely related to the space program in China, but in many respects they were totally different, especially in terms of the rationale. It would be hard to believe that Chairman Mao’s declaration of aspirations for a satellite launch in 1958 was for national defense. Generally speaking, pursuing national power was China’s long-term rationale for the space program, and in terms of short-term rationales, especially focusing on the period 1956-1970, international strategy (world revolution), national prestige (earning respect), and foreign strategy (pursuing recognition) were among Chairman Mao’s priority considerations.

China is typical among countries who had been prosperous and strong in ancient times, suffered from invasion and persecution in the modern world, and were isolated and contained by the Western countries after years of struggling for independence from colonialism. In a nation like China, people place great value on face-saving as a part of their culture, and have very intense national feelings of self-respect. So, Chairman

¹ Guidance for the May 20 Sino-U.S. Ambassadorial Meeting, in DNSA, CH00173.

² Vernon Van Dyke, *Pride and Power: The Rationale of the Space Program* (Urbana, IL: University of Illinois Press, 1964); William S. Bainbridge, *Goals in Space: American Values and the Future of Technology* (State University of New York Press, 1991).

³ Yanping Chen, *China’s Space Activities, Policy and Organization, 1956-1986*, p. 104.

Mao's anger towards the United States is quite understandable considering his feeling of being unfairly treated by the United States after 1949, and having his persistent efforts to communicate with the American high-level officials rebuffed. Mao's strong sense of humiliation at the hands of the United States partially because of the Taiwan issue is well known. Thanks to US obstruction, China could not reunify with Taiwan. But that is only part of what made Mao furious. What made him even more incensed, according to Mao's conversation with Indonesian President Suharto, was his perception that the US government manipulated Taiwan to represent China in the United Nations and other international organizations.⁴ Even so, Chairman Mao still attempted reconciliation with the United States by showing China's peaceful goodwill in the 1954 Geneva conference. But he gave up all hope after being spurned by the United States. Therefore, Mao's revolutionary or anti-American thoughts were more or less a response to US policy towards China, rather than the other way around.

Chairman Mao, as mentioned above, attributed the humiliations and isolations suffered from Western countries mainly to China's backwardness. He tried to win the respect of the Western countries by showing China's strength in the Korean War, but that only added to an aggressive image of China. He wanted China to attain prosperity as fast as possible. That is why he was uneasy with the slow progress of China's economy during 1956 to 1958, and launched the Great Leap Forward movement. In the cold war environment, especially in the context of its isolation, space exploration provided a useful tool for China to pursue international recognition—most importantly, US recognition. As a matter of fact, the Chinese achievement of nuclear and space power did create a growing need to bring China under the umbrella of the international safeguards system. And when US-Soviet relations once again fell to a near non-existent state, China was powerful enough to be chosen as a balancing power by the US government. As the US Consul General in Hong Kong observed in a telegram to the State Department, "Communist China's principal external problem—and its chief mission—has been its confrontation with the United States." He further analyzed that "Chinese Communists have assigned high priority... to the technology which can create the most modern symbols of great-power status. The accomplishment in the field of rocketry and nuclear, and perhaps Chinese aggressiveness as well, have lent force to arguments that China cannot be ignored, and that it therefore should be admitted to the UN and to other international forums."⁵

Compared to the superpowers—the Soviet Union and United States—China's early space exploration was mainly driven by practical foreign policy objectives, rather than scientific or national security motives. As shown recently in the case of North Korea—as a country sanctioned by the West for more than fifty years, and labeled a "rogue state" by the United States—a satellite launch provides a good chance to change a given country's international position, or even its national fate. Just like China in the 1950s and 1960s, there are many motivations behind North Korea's space program. Earning respect from the Western world is one of them;⁶ breaking its isolated status and returning to the international community is another one. China's early space program, which was planned and implemented in conditions of premature technology and a difficult economy, especially exposed Communist leaders' eagerness to strengthen China, and pursue international recognition

⁴ Mao Zedong, "On the issue of resuming China's lawful seat at the United Nations, Sep 30, 1956," in Party Literature Research Center, CCCPC ed., *Selected Works of Mao Zedong on Diplomacy*, p. 267.

⁵ Cable from Consul General in Hong Kong to Department of State, Jan 7, 1966, in DDRS, CK3100090256.

⁶ In an April 9, 2009 CNN interview program, when the anchor asked former Secretary of State Madeleine Albright a question about "what Kim Jong Il wants," she answered with conviction that "he wants respect."

with dignity.

There is something different in China's experience from the North Korean case: Mao's political philosophy about world revolution, which had a great effect on China's decision to pursue its space program. Throughout his lifetime, Chairman Mao devoted himself to the world revolution. When Sputnik I was orbited into space by the Soviet Union, Mao was very excited and proudly announced, "The East wind has prevailed over the West wind." His argument was based on the great success of the Soviet satellites. He also ridiculed the United States by inquiring, "Isn't the United States supposed to be very powerful? Then why have you not yet sent up even a potato?"⁷ Motivated by the Sputnik effect, Mao soon declared China's own satellite project, and regarded it as a part of the revolution to fight capitalism. However, Khrushchev's strategy of "peaceful coexistence," and the following Sino-Soviet conflict over the socialist revolution signaled to Mao that people might lose their revolutionary spirit if they grew too obsessed with economic and technological progress. So, he warned that China must avoid a situation in which "the satellite launches into space, while the red flag falls to the ground." But the satellite program was too important to be abolished. Especially when China faced a practical threat from the Soviet Union, he had to change his revolutionary policy to a more practical one. Finally, the first satellite succeeded in Chairman Mao's dilemma.

There are of course many other reasons behind China's decision-making about its space program, for instance, Mao and other high-level leaders' desire to strengthen their own political positions or stabilize domestic chaos in a particular period. However, in terms of consistent rationales over time for China's space program, foreign strategy—especially foreign policy towards the United States—was obviously among the first considerations of Chairman Mao.

The US Government's Reaction towards China's Early Space Exploration

As Ashley Tellis put it, as "a weaker but significant challenger,"⁸ the People's Republic of China has posed a special and constant problem to American decision-makers since its establishment, and the coming of the Space Age increased the complexity of their policy making.

China during the 1950s and 1960s was far behind the United States in almost every aspect relevant to the balance of power, especially in the field of advanced technical systems. After 1957, China's space program gained some technical assistance from the Soviets, but soon went into a period of low-speed development due to the Sino-Soviet split. Henceforth until 1965, China's space exploration was at a stand still, except for a sounding rocket research program. After 1966, social turmoil caused by the Cultural Revolution interrupted space scientists' work on satellite launching, and conflicts between different sects further destroyed the efforts in the space field. As a result, China's space program was delayed dramatically, and was simplified at the same time.

Nevertheless, it was during this period that the American intelligence community gave intelligence estimates on China's space exploration that were quite divorced from reality, and hence US decision-makers' concern about China's program reached the level of a scare. Soon after the Soviet launch of Sputnik I, there were serious concerns in the Eisenhower administration about the possibility of a Chinese satellite, and its

⁷ Mao Zedong, Michael Y. M. Kau, John K. Leung, *The Writings of Mao Zedong, 1949-1976*, Volume II, p. 786.

⁸ Ashley J. Tellis, "China's Space Weapons," *The Wall Street Journal*, July 23, 2007.

negative impact on Western superiority. In its first comprehensive national space policy document, NSC 5814/1, the National Security Council expressed its deep concern about a Chinese satellite.⁹ From the Eisenhower administration to the Nixon administration, successive US governments tried every way they could to spy on China's space programs, to embargo the transfer of high-tech equipment to China, and to balance power in the space field by aiding Japan, India, and some other countries.

It is safe to say that US policy toward China during the first half of the cold war period was typified by a kind of overestimation and overreaction, considering the huge disparity in economic status, military capabilities, and international positions between the two countries. This conclusion is even more reasonable in terms of the levels of both countries' space exploration and utilization. In a broad perspective, space policy is not the only field where the United States shows its overestimation of and overreaction to China. This policy tendency exists widely in many aspects of US policy toward China, especially in the field of advanced technology related to weapons systems. It seems that during the first twenty years of the cold war period overestimation and overreaction were prominent features of the US government's policy toward China.

What factors contributed to the formation of American policy towards China, and Sino-American rivalries in space program development? Apparently, such factors as China's military strength, its economic condition, even its huge population did have some influence on it. Some scholars reference China's geographical position, its alliance with the Soviet Union, its disrespect of international regulation, and its inclination to selling revolutions. Besides the reasons mentioned above, however, there is still the significant factor of American policymakers' inability to understand Chinese history and culture, and the mutual distrust between the two states due to the cold war.

Thanks to historical and realistic reasons, the new China in its founding stage did display reluctance to cooperate with the United States. The new China did not want to inherit old diplomatic relations and international treaties established and signed by the defeated Nationalist regime, because those relations and treaties were regarded as humble symbols of the old half-colonial China. Chairman Mao soon declared new China's foreign policy, which was generalized as "putting the house in order before inviting guests." Meanwhile, such diplomatic conflicts as the Ward Case¹⁰ and the Incident of the Real Estate of America's Military Camp in Beijing¹¹ gave the Americans a very strong feeling that the new Chinese regime would not follow existing international regulations. In May 1949, American Secretary of State Dean Acheson approved three factors of recognizing new China. Among others, "ability and willingness of [government] to discharge its [international] obligations"¹² received wide-spread attention and discussion. As in the present case of North Korea, wherein the United States has repeatedly denounced that it "broke the rules," the reason behind the harsh US policy towards China was mainly because of its out-of-rule activities. As a result, the door leading to a

⁹ United States Department of State, FRUS1958-1960, Volume II, p. 846.

¹⁰ The Ward Case occurred in China in 1948-49. Before the victory of the Chinese Communist party, American Consul Angus Ward and his staff in the Sheng Yang consulate were held under house arrest by the People's Liberation Army for almost a year, causing a diplomatic rift with the United States. The Ward Case is regarded as the beginning of the confrontation between the United States and the People's Republic of China.

¹¹ After achieving control of Beijing in early 1949, the Chinese Communist Party began to confiscate American assets in China. The American Military Camp in Beijing was one of the most important assets of the United States, and caused bitter conflict between Chinese officials and American ambassador Edmund Clubb.

¹² United States Department of State, FRUS 1949, Volume IX. The Far East: China, p. 22.

formal relationship was closed by both sides. Henceforth, misunderstanding and misconception between the United States and China enhanced the long-term isolation and lack of dialogue between the two nations. To Chinese leaders, the US government would not like to give up its unequal policy towards China. And from the Americans' point of view, China had launched a challenge to their values and to their efforts in the international system; consequently, any progress of China would constitute a threat to the United States.

Due to this hostile relationship, the United States was used to formulating harsh policy towards China based on worst-case judgment. Subconsciously, Americans worried about China's breakthrough in any field of advanced technology, and the intentional space exploration of China aggrandized their worries. To most Americans, the possible surprise came from not only the real military threat to their national security posed by Chinese advanced weapons systems, but also challenges to Western superiority in the Pacific area, which could well be balanced by China's effort in space exploration. Chinese leaders' anti-America speeches, China's isolation from the Western world, and Chinese society's secrecy and inaccessibility to any American intelligence enhanced those worries and fears. As far as China's advanced weapon programs were concerned, the intelligence community inclined to give an evaluation consistent with their preventive mentality.

Above all, the thirty years of confrontation between China and the United States in not only the space field but also all fields related to bilateral relations demonstrated that what they have experienced is nothing but a self-fulfilling prophecy. During the first half of the cold war, mistrust and misunderstanding occupy a central place in the overall Sino-US relationship. To Americans, China is a country that constantly challenges rules and orders established by the United States. To Chinese, the United States is an imperialist and hegemonic country that oppresses weaker states, despises their culture and history, and imposes its own will on others. As addressed above, the motives behind China's early space program were mainly foreign policy and face-saving factors. Nevertheless, US perceptions of the Chinese space program were formed by security considerations in the long run and power competition (expelling US power out of the Pacific Ocean) in the short term. By and large, China and the United States need to face their cultural and value differences, and build mutual relations of trust based on deepened understandings and reasonable analyses and judgment on cases where their positions may diverge.