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CHINA AND ASIA SPACE POLICY UPDATE

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**CHINA AND ASIA
SPACE POLICY UPDATE
JOHN D. WOLF**

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You can't believe everything you hear about the Chinese space program. I worked in Beijing in the late 1990s, and there I encountered a man named Mr. Li. Mr. Li spoke good English, appeared well educated, and claimed to have been in the Chinese Air Force. He would sometimes talk with me about the Chinese space program, particularly about the Chinese space launch facility in Tibet where they were preparing for a mission to the Moon some time before the end of 1999. The purpose of the mission, he said, was to crack open the Moon to allow the Earth to pass through it and enter the next century. The story pretty much went downhill from there. Eventually I had to break off my relationship with Mr. Li, explaining that his version of reality and mine were too far apart.

The real Chinese space program has recently entered a new and exciting phase: manned spaceflight. The Chinese successfully put astronauts in Earth orbit in 2003 and 2005. This makes them only the third country in the world to

develop this level of space technology. These launches have sparked tremendous popular enthusiasm and pride in China for their space accomplishments, and they look forward to greater achievements. Unfortunately, anyone searching for reliable information on the future of the Chinese manned space program will likely be frustrated by the lack of credible information.

The only published space policy document was done in 2000, long before the first manned mission. It contained few concrete details. Since then, while there is plenty of speculation in the popular press, real government information on the manned space program has largely been limited to brief statements, little more than sound bites, by government or space industry officials. The Chinese are not very free with information in some areas, and since the space program is viewed as connected with their military, it is a sensitive topic. Such public statements as have been made can be woven together into an outline of sorts on China's plans. The question remains, however, how closely this outline matches China's actual intentions.

China could prove either a competitor or a partner with the United States in developing manned space capabilities. It is therefore important to know, as best we can, what China's policy is for manned spaceflight. The starting point for such knowledge should be what Chinese officials have said their program consists of. Then, later, as they progress in their activities, we can get a sense of the reliability of this data by comparing words and actions.

**Initial Policy Statement: The 2000
White Paper**

The closest that the Chinese have come to a public space policy is the State Council publication of "China's Space Activities: a White Paper," in November 2000. This was a first-ever public government outline of their space

programs and enumerated the following development targets:

- The short-term development targets (for the next decade) are:
 - To build up an earth observation system [including] meteorological satellites, resource satellites, oceanic satellites and disaster monitoring satellites.
 - To set up an independently operated satellite broadcasting and tele-communications system [with] geo-stationary telecom satellites and TV live broadcasting satellites.
 - To establish an independent satellite navigation and positioning system.
- The long-term development targets (for the next 20 years or more) [include]:
 - To establish a multi-function and multi-orbit space infrastructure composed of various satellite systems and set up a satellite ground application system.
 - To establish China's own manned spaceflight system and carry out manned spaceflight scientific research and technological experiments on a certain scale.
 - To upgrade the overall level and capacity of China's launch vehicles.
 - To realize manned spaceflight and establish an initially complete R and D testing system for manned space projects.
 - To establish a coordinated and complete national satellite remote-sensing application system.
 - To develop space science and explore outer space by developing a scientific research and technological experiment satellite group of the next generation, [and] carrying out pre-study for outer space exploration centering on the exploration of the moon.”¹

¹The Information Office of the State Council, [China's Space Activities, a White Paper](#), 22 November 2000, emphasis added.

In sum, the Chinese published ambitious space goals including manned spaceflight, manned space experimentation, and lunar exploration. Discussions about the final goal have been somewhat ambiguous and controversial but later sources have clarified that the manned space program includes manned lunar missions. The formal adoption of these programs was made public by Luan Enjie, Administrator of the China National Space Agency (CNSA), in a 2001 report indicating that *space science, deep space exploration and manned space flight* were part of China's development targets for the Tenth Five-Year Plan (2001-2005).²

the Chinese published ambitious space goals

Since that time, there has been no comprehensive government statement of policy for China's space programs. The CNSA website currently has a link called “Space Policy,” but clicking there will lead the reader to a copy of the 2000 White Paper. Those interested in China space policy today are generally left to piece together statements by government or space program officials, most of which reveal little more than one or two nuggets at a time.

From these statements a sort of policy can be assembled, or at least an outline of the declared space program can be seen. What follows is a summary of what has been said from 2003 into 2006 by officials in the program or other government spokesmen. Although fragmented, the collection of such statements expands on this initial outline and provides a basis for tracking the development of manned spaceflight technology. In the near term, the focus of such statements has been on plans for the next missions in the Shenzhou (Divine Vessel)

²Luan Enjie, Administrator of CNSA, “[Policy and Prospects for the Development of China's Space Technology](#),” *Aerospace China*, Winter 2001, emphasis added.

program that has included the two manned missions to date.

Future Shenzhou Missions

During the months leading up to and especially after the successful flight of Shenzhou 6 in October 2005, Chinese space officials apparently felt more confident in making predictions for the future of this program. Yang Yiwei, China's first astronaut was quoted by *People's Daily* in August 2005 as saying that Shenzhou 7 would fly in 2007 and include a space walk. He also said that Shenzhou 8 would leave a cabin in space for later docking activity by Shenzhou 9, but he gave no timetable for these missions.¹ The Director of the Manned Space Engineering Office, Tang Xianming, gave a statement in October 2005 that said a spacewalk would in fact occur in 2007 and that manned docking would take place in 2009-2012.²

By early 2006, however, the planned launch date for the Shenzhou 7 mission had been pushed back to 2008. The new Director of the Manned Space Engineering Office, Wang Zhougui, announced the change and that "the space walking astronauts will walk in the [Chinese-made] space suit and do some space experiments. Our initial plans are to have 1 or 2 astronauts walk in space for about half an hour."³ This shift was confirmed a week later by Huang Chunping, chief consultant for China's manned launch vehicle system, in a *Xinhua* interview. "There is nothing wrong," said Huang, "We just need more time to prepare for the mission."⁴

Also by early 2006, the space-dock mission was being connected to the Shenzhou 8 flight. Wang Zhougui was again the source of this. He was

quoted by *China Daily* as saying that "Shenzhou 8, with the mission of a space dock, will be launched around 2009 to 2011." It was not clear from his remarks what equipment from which missions would be part of the space dock operation. He said only that "space docks refer to those between two space flights or between a space flight and a space capsule."⁵

Space Lab

Beyond the Shenzhou program itself, Chinese officials have revealed an interest in two manned orbiting systems. Remarks on these systems go back at least to the enthusiastic days after the Shenzhou 5 launch, when Zhang Qingwei, Deputy Commander of China's manned space program, said China "would strive for breakthroughs in space rendezvous and docking technology for launching a space lab and eventually a manned space station."⁶ Details on what China means by a space lab have been few. In early 2006, however, a presentation to the National People's Congress on the space program stated that the construction of a "sky lab" was part of the Five-Year Plan for 2006-2010 submitted to the Congress for approval.⁷

Chinese Manned Space Station

As mentioned above, Zhang Qingwei referred in 2003 to the plan for a Chinese space station. Such a craft would "enable China to carry out large-scale scientific experiments and applications in space," said Zhang, as part of the manned space program originally laid down in 1992. He further stated that such space-based infrastructure as the space lab and station would

¹*People's Daily* Online, 12 August 2005.

²*Xinhua, People's Daily* Online, 17 October 2005.

³*China Daily*: Spacewalk Mission Set for 2008: Official, 24 February 2006, FBIS CPP20060224074023.

⁴Beijing *Xinhua*, "China to Delay Launch of Shenzhou-7 Spacecraft to 2008," 4 March 2006, FBIS CPP20060304054017.

⁵*China Daily*, "Spacewalk Mission Set for 2008: Official," 24 February 2006, FBIS CPP20060224074023.

⁶Xinhua News Agency, 16 October 2003, emphasis added, [China to Develop Space Lab, Space Station](#).

⁷*Xinhua, People's Daily* Online, 7 March 2006, [China's Space Program Seeks New Breakthroughs in Five Years](#).

serve as a platform for deep space probes.⁸ The inclusion of a space station in the manned space program was confirmed in late 2003 by the deputy director of CNSA.

In 2003, the Chinese were saying that a space station would take “about 15 years” to complete. Wang Yongzhi, described by Xinhua as chief designer of China's manned space program since 1992, made this statement in a speech to a group of high school students.⁹ Huang Chunping of the launch vehicle program said in February 2004 that China would have a space station by 2015.¹⁰

Again, with practically no expansion on details of the program, Chinese space officials in late 2005 and early 2006 were still stating that a space station was in the plan. Zhang Qingwei was saying no more than that China would “eventually” launch a manned space station to carry out large-scale experiments.¹¹ Wang Zhougui included a Chinese space station in his February 2006 review of the manned space program, but he likewise gave no indication of when they might launch such a station.¹² Hu Shixiang, described as “a former senior commander” in China’s manned space program, stated in March 2006 that the space station was in the 11th Five Year Plan submitted (with the sky lab) to the National People’s Congress.¹³

Unmanned Lunar Probes

Chinese officials have repeatedly stated that travel to the Moon is part of their space program. While most of the discussion of near-term missions has been about unmanned probes, several public statements have pointed to manned lunar missions in the future as well.

Following the first successful Shenzhou mission, press reports were predicting lunar missions. In 2003, Qinghua University and the State Robot Research Center were reportedly already working on the manufacture of lunar landing vehicles.¹⁴ Late that same year, Zhang Qingwei was quoted by *Xinhua* as saying China was to “launch its first Moon probing satellite in the next three to five years.”¹⁵ In November 2004, Hu Hao, described as “Director of the Lunar Exploration Engineering Center,” presented an outline of the lunar program in a conference. He said the program was divided into three stages: orbiting the Moon in 2007, an unmanned landing on the Moon carrying a “Moon rover” by 2012, and the use of lunar vehicles on the Moon to collect samples of lunar soil from then to 2017. (Other statements by space program officials clarified that this third stage involved the return of samples to Earth.¹⁶) Hu stated that the first craft in China’s lunar exploration program, the Chang’e-1 satellite, would be sent to orbit the Moon in 2007 from the Xichang Satellite Launch Center.¹⁷

As of 2005, this same three-stage program was still being described as well as the steps underway to bring it about. The Lunar Exploration Engineering Center was opened in August in Beijing, with the opening ceremony

⁸Xinhua News Agency, 16 October 2003, [China to Develop Space Lab, Space Station](#)

⁹Hong Kong *Hsiang Kang Shang Pao*, “China’s Lunar Probe, Aerospace Development Programs,” 18 October 2003, FBIS CPP20031213000078.

¹⁰Hong Kong *Wen Wei Po*, “China To Set Up Space Laboratory Before 2009 and Space Station Before 2015,” 30 March 2004, CPP20040410000026.

¹¹*Xinhua, People’s Daily* Online, 13 October 2005.

¹²*China Daily*, “Spacewalk Mission Set for 2008: Official,” 24 February 2006, FBIS CPP20060224074023.

¹³*Xinhua, People’s Daily* Online, 7 March 2006, [China’s Space Program Seeks New Breakthroughs in Five Years](#)

¹⁴Shanghai *Jiefang Ribao*, “China’s Lunar Probe, Aerospace Development Programs,” 17 October 2003, FBIS CPP20031213000078.

¹⁵Xinhua News Agency, 1 November 2003, [China to Launch Moon Probing Satellite in 3 to 5 Years.](#)

¹⁶*People’s Daily* Online, 22 November 2004.

¹⁷*People’s Daily* Online, November 08, 2004.

presided over by Zhang Yunchuan, minister in charge of the Commission of Science, Technology and Industry for National Defense (COSTIND), which has authority over the lunar program.¹⁸ A spokesman for the China Aerospace Science and Technology Group (CAST) said in October that his company was involved in the research and development for the Chang'e-1 lunar probe.¹⁹ By January 2006, COSTIND had listed the manned space program and the lunar probe program as two of its five major tasks for the 2006-2010 timeframe.²⁰

Manned Lunar Missions

Several reasons have been given by the Chinese for lunar missions, to include exploration and exploitation of resources on the Moon, the further development of spaceflight technology, and prestige: “stimulating national spirit and cementing national cohesion.” An article in *PLA Daily* in April 2004 further stated that “China will complete the unmanned moon exploration in about 20 years and then launch and fulfill a manned moon landing.”²¹ Luan Enjie repeated in 2005 that the lunar probe missions were designed to “provide data for manned lunar missions and for choosing a site for a lunar base.”²²

The timing of China’s planned mission to the Moon remains vague. Ouyang Ziyuan, an academician of the China Academy of Sciences and chief scientist of the Moon-probe program, claimed in November 2005 that “China will make

Will the Chinese be able to execute the plan in anything like the timelines described?

a manned moon landing at a proper time, around 2017,” He further claimed that a goal of such missions would be to report on the presence of “Helium-3.”²³ At about the same time, Hu Shixiang was saying that he thought a Chinese manned lunar landing would occur “in about 10 to 15 years.”²⁴ The latest comment by Luan Enjie of CNSA, in December 2005, sounded like a plea for patience. “Sending a man to the Moon? It would be a one-way ticket if we do it now, given [that] the thrust of our rockets at present is not strong enough.”²⁵

The Chinese Program: How Serious?

To sum up, Chinese government and space program officials have collectively described a manned spaceflight program that includes space walks by 2008, space docking attempts by 2011, a space lab in orbit by perhaps 2012, a Chinese space station in orbit by perhaps 2015, and a manned mission to the Moon by around 2017. There have been remarks on other programs – a mission to Mars, Chinese “space tourist” launches – but these seem far off, speculative, and not part of a real program.

Two questions arise about the declared elements of the program as we understand it. First, does this outline reflect the actual Chinese plan? Second, is the plan real in the sense that the Chinese will be able to execute it in anything like the timeframes described? An additional question might be: how do we make reasonable judgments on the first two questions?

In the first case, it may not be possible to know if the outline above is the real plan until we have access to the real plan. It is possible that the

¹⁸*Xinhua*, *People’s Daily* Online, 23 August 2005.

¹⁹*Xinhua*, *People’s Daily* Online, 17 October 2005.

²⁰*Xinhua*, *People’s Daily* Online, 6 January 2006.

²¹*PLA Daily*, in *People’s Daily* Online, 9 April 2004.

²²*China Daily*, in *People’s Daily* Online, 16 August 2005.

²³*China Daily*/agencies, in *People’s Daily* Online, 5 November 2005.

²⁴*Reuters/China Daily*, in *People’s Daily* Online, 28 November 2005.

²⁵*China Daily*, in *People’s Daily* Online, “Chinese Man on the Moon Far Off,” 30 December 2005.

Chinese will update their White Paper and make the program contents and timetable more explicit. Short of that, a careful watch on future public statements can give a sense of consistency or fluidity in the declared program. Major fluctuations in timing or contents, as they appear in future statements, may suggest that the public plan and the real plan are quite distant from one another. Of course, tracking actual spaceflight activity will eventually tell us if these declarations were made in good faith. It will likely be a matter of some years before we can compare this outline with actual progress. In the near term, the launch of a lunar probe and the accomplishment of a Shenzhou space walk by 2008, as declared, would argue that declarations to date have been about the real plan.

In the second case, the question of whether this is an executable plan, access to the technologies being developed and knowledge of the resources available and allocated to this plan could help determine if they can achieve the stated goals. The Chinese are more likely to be open about the first of these. There is already a certain level of openness in scientific journals' coverage of research for space programs in general. Since the manned program carries such prestige, they are likely to trumpet the achievements made in technologies that contribute to this program. The manned program is also more public and less sensitive than some other space programs such as reconnaissance, geopositioning, and military communications satellites.

Following the money is more challenging because, as with their military budget, the Chinese are anything but open and seem to calculate expenditures in very different ways from the West. There have been a few general statements on space budgets for the manned programs, such as the claim in 2004 that U.S. \$2.18 Billion had been spent on the manned space program in the preceding 11 years.²⁶ Beyond

such sweeping statements, little detail is available. We are left to guess whether Chinese spending is sufficient to achieve stated goals in the times given publicly.

Looking at the program in the larger sense, we can see that the Chinese are at a point when the technologies needed for manned spaceflight are now available to them and they believe achievements in manned space exploration are within their grasp and important to national pride. They are serious in that they have set goals for themselves in space and are working toward them. Manned space missions play a prominent role in their plan. Their accomplishment of the set goals of a Chang'e lunar probe and Shenzhou space walk/space docking missions should tell us whether they are serious enough to make the plan happen.



²⁶*People's Daily Online*, "China to Launch Space Station in 15 Years," 18 May 2004.