



Trends That Impact Perceptions of the Chinese Space Program

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The People's Liberation Army's (PLA's) intention to allow civilian astronauts and non-state-owned enterprise (SOE) companies to participate in the Chinese Space Station (CSS) are two trends that will probably change the global image of the Chinese space program, but which risk being overlooked with hyped attention on the still distant crewed lunar program. While the CSS is not the linchpin for the People's Republic of China's (PRC's) recently confirmed timeline to land two PRC astronauts on the Moon by 2030 for a short period of tests and experiments; the CSS is however necessary for the PRC to achieve its goal for a sustainable crewed lunar program.¹ Importantly, watching the development of the CSS will reveal clues about possible international and commercial participation. Support and buy-in from such groups are key to a sustainable space program and demonstrating the PRC's leadership in space.

The PLA's China Manned Space Engineering Office (CMSEO) followed through with its 2016 promise to include civilians in the astronaut corps, and launched its first civilian astronaut in May of 2023.^{2,3,4} Gui Haichao is only one of multiple civilians in the third and fourth batches of PRC taikonauts, which CMSEO will gradually introduce to the world over the next several years.^{5,6} Included in the fourth batch is probably a trainee from Hong Kong or Macau. The long-term impact of the PLA's commitment to recruit and train civilian astronauts will have a currently uncertain effect on the PLA astronaut program. The decision's impact on global perception, together with ongoing international astronaut selection, seems very likely to improve the PRC standing at least in its joint program with the United Nations, if not also with existing astronaut programs.^{7,8} For example, the European Space Agency might consider it an incentive to re-engage on its original plan to send astronauts to the CSS.⁹ While the Indian experiment destined to the CSS is awaiting approval from the Indian government, the Chinese and Indian foreign ministers and other personnel have met twice already this year, indicating they may have already discussed the issue.^{10,11,12}

The CMSEO solicitation for non-SOE proposals for CSS resupply vehicles in May of 2023 will also directly impact the long-term development of the Chinese space program and global perception of it.¹³ If the above example of civilian inclusion in the astronaut program is any guide, we should expect another quiet but official confirmation, and indications of the types of companies competing for CSS contracts in the 15th Five-Year Plan (2026-2030). The May solicitation importantly requires applicants' spacecraft designs to demonstrate that they have either a controlled reentry or controlled destruction, with the latter meeting specific environmental requirements. The solicitation also requires the companies' spacecraft to be

capable of fully autonomous rendezvous and docking with the CSS, and the ability to avoid collisions, best practices on which the CMSEO will share with promising applicants.¹⁴ As seen with Chinese domestic excitement and international debate on the PRC's diversification of its launch vehicle providers, PRC companies are going to be popping up and western companies may get very concerned.¹⁵

A Chinese space program that starts to look more like other advanced programs with varied participation will propel plans the PRC has already put in place to include developed and developing countries in the CSS and the International Lunar Research Station.^{16,17} Diversification will also bring about more transparency and allow open-source researchers to track the specific civilian astronauts and companies participating on the CSS to better guide assessments. While inclusion of more Chinese companies in the CSS resupply spacecraft sector will not be as internationally contested as the space launch sector, the diversification may complicate the International Space Station's shift towards commercially run space stations.^{18,19}

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ENDNOTES

¹ Spacenews, “China sets out preliminary crewed lunar landing plan,” 7/2023, <https://spacenews.com/china-sets-out-preliminary-crewed-lunar-landing-plan/>

² Globalsecurity.org, “921 Project Shenzhou, China and Piloted Space Programs,” 2021, <https://www.globalsecurity.org/space/world/china/piloted.htm>

³ 国务院办公厅, “中国空间站关键技术攻关完成,” 10/2018, https://www.gov.cn/xinwen/2018-10/25/content_5334244.htm

⁴ Spacenews, “China calls for space station commercial cargo proposals,” 5/2023, <https://spacenews.com/china-calls-for-space-station-commercial-cargo-proposals/>

⁵ China Daily, “18 picked for nation's 3rd generation of astronauts,” 10/2020, <https://www.chinadaily.com.cn/a/202010/01/WS5f75405fa31024ad0ba7cf78.html>

⁶ 中国载人航天工程网, “我国第四批预备航天员选拔工作已于近期启动,” 10/2022, https://www.cmse.gov.cn/xwzx/202210/t20221003_50873.html

⁷ United Nations Office for Outer Space Affairs, “The United Nations/China Cooperation on the Utilization of the China Space Station,” 6/2019,

https://www.unoosa.org/oosa/en/ourwork/psa/hsti/chinaspacestation/1st_cycle_2018.html

⁸ Spacenews, “China to expand its space station, international astronaut selection underway,” 2/2023, <https://spacenews.com/china-to-expand-its-space-station-international-astronaut-selection-underway/>

⁹ Spacenews, “ESA is no longer planning to send astronauts to China’s Tiangong space station,” 1/2023, <https://spacenews.com/esa-is-no-longer-planning-to-send-astronauts-to-chinas-tiangong-space-station/>

¹⁰ Global Times, “Exclusive: Project manager urges smooth collaboration as Indian equipment for China Space Station cooperation struggles with export clearance,” 8/2023, <https://www.globaltimes.cn/page/202308/1296314.shtml>

¹¹ Ministry of Foreign Affairs of the People’s Republic of China, “Assistant Foreign Minister Hua Chunying Meets with the Indian Delegation,” 2/2023, https://www.fmprc.gov.cn/mfa_eng/wjbxw/202302/t20230223_11030244.html

¹² Ministry of Foreign Affairs of the People’s Republic of China, “Qin Gang meets with Indian External Affairs Minister Subrahmanyam Jaishankar,” 5/2023, https://www.fmprc.gov.cn/eng/zxxx_662805/202305/t20230505_11070924.html

¹³ Spacenews, “China calls for space station commercial cargo proposals,” 5/2023, <https://spacenews.com/china-calls-for-space-station-commercial-cargo-proposals/>

¹⁴ 中国载人航天工程网, “关于征集空间站低成本货物运输系统总体方案的公告,” 5/2023, https://www.cmse.gov.cn/gfgg/202305/t20230515_53551.html

¹⁵ Spacenews, “China’s space station emerges as competitor to commercial ventures,” 8/2021, <https://spacenews.com/chinas-space-station-emerges-as-competitor-to-commercial-ventures/>

¹⁶ The PRC State Council Information Office, “China’s space station Tiangong enters new phase of application, development,” 12/2022, http://english.scio.gov.cn/in-depth/2022-12/12/content_85007707.htm

¹⁷ SpaceRef, “China Lays Out Plan to Accelerate Lunar Ambitions,” 7/2023, <https://spaceref.com/science-and-exploration/china-lays-out-plan-to-accelerate-lunar-ambitions/>

¹⁸ Spacenews, “ISS partners weigh options for using commercial space stations,” 10/2022, <https://spacenews.com/iss-partners-weigh-options-for-using-commercial-space-stations/>

¹⁹ U.S. National Aeronautics and Space Administration, “Commercial Use of the International Space Station,” 7/2022, <https://www.nasa.gov/leo-economy/commercial-use-of-the-international-space-station>