Space Stations and International Politics

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ALEKSANDER M. LUBOJEMSKI, OCT 23 2021

The first space station, Salyut 1, was launched by the Soviet Union in 1971. Although it was only in orbit for a little over 170 days, it began a stream of newer and better versions over the years – from Skylab to Tiangong. These stations have become a feature of space exploration, forever transforming our views on how humans can interact outside of Earth for longer periods of time. Simultaneously they have broadened our understanding of biology, physics, astronomy and engineering. Space stations are not only objects of scientific interest. As with many aspects of the social world, they are objects of great power competition, social relations and cooperation. This article will focus on the intertwining of global politics and space stations, attempting to determine how space stations have influenced international politics. The International Space Station (ISS) and Tiangong as the primary case studies for three reasons. First, they are the most recent examples of functional permanent space stations in Earth orbit. Second, through its lifespan and influence, the ISS is arguably the most important space station that has existed. Through the changing nature of the international system, especially the rise of China, it is also a necessity to examine what role the Tiangong station plays, or will play, in global politics. Third, both are, or will be, based on broad international cooperation in general or specific aspects.

The International Space Station

The International Space Station is a staple in the night sky, able to be seen by the naked eye. It has allowed humanity to better understand how humans live in outer space, as well as fostered international scientific collaboration on a wide scale. The station has been in orbit since 1998 and has been occupied for over twenty years. It is made up of 16 pressurised modules and is sometimes labelled as the most expensive human construction in history.

The idea behind what is now known as the ISS arose during Ronald Reagan's presidency (1981–89), long before the end of the Cold War. Although the space station never came into existence, the political dimension had already kicked in. First, the project was to be based on international cooperation, especially of like-minded states, but under clear American leadership (Logsdon, 1991). Second, the pro-democratic (or anti-Soviet) character of the station was underlined in its name – Space Station Freedom. Third, the political ambitions associated with the ISS are evident within his *State of the Union* speech itself, Reagan anticipating that America could "reach for greatness again" through "our dreams to distant stars, living and working in space for peaceful, economic, and scientific gain" (Reagan, 1984). The participating states were to be close allies and well within their sphere of influence (Europe via the European Space Agency, Japan and Canada), countries that wish to "strengthen peace, build prosperity, and expand freedom" (Reagan, 1984). This project is a perfect example of how space stations intertwine with international politics – it was to be a tool in the ideological battle against Communism, show the technological superiority of Capitalism, and bind the American sphere of influence into a common undertaking.

Yet it was only after the Cold War that the ISS came to fruition. The fall of the Soviet Union in 1991 created a moment of unipolarity in the global balance of power, leaving the US as the sole superpower, allowing the country to dominate international politics. The *Intergovernmental Agreement* (IGA), which is the binding regulatory agreement regarding the ISS, gives testimony to this dominance. The first article states that partners "will join their efforts, under the lead role of the United States for overall management and coordination, to create an integrated international Space Station" (*Agreement Concerning Cooperation on the International Space Station. With Implementing Arrangement* , 1998). Although a collaborative project, there was a clear leader. This presented the US as the absolute forerunner in

science and technology, a prestigious position that underlined the new balance of power. It may be that the American position itself gave the opportunity for such collaboration in the first place, by guaranteeing stability through unipolarity.

The political dimension during the establishment of the ISS did not end with the IGA. Wooing Russia into the project, especially under official American leadership, was an even more impressive political victory. As the successor state of the Soviet Union, America's main adversary on the ground and in space, Russia's accession into the ISS project gave a certain acknowledgement of the position the US had gained. The political dimension of Moscow's partaking in the project goes even further than sole prestige. Washington was able to influence Russian policies in space technology, such as stopping the sale of cryogenic technologies to India (Chladek, 2017), and ensuring Russian scientists kept their jobs in Russia, thus stopping the possible dissemination of critical space technology to other nations (Moltz, 2011). By engaging Russia in the ISS, the US was able to successfully use the station as a tool in its diplomacy and leverage certain decisions that Moscow had to take to benefit from the ISS.

It is nonetheless important to underline that while space stations influence international politics, they are also influenced by international politics – the ISS being a good illustration. The first major turbulence in cooperation on the ISS project began after the Russian invasion of Crimea in 2014. NASA banned most contact with their Russian counterparts, after which Ditriy Rogozin, the head of the Russian space agency, tweeted that the US should deliver "its astronauts to the ISS with a trampoline" (Johnson-Freese, 2017). Furthermore, escalating tensions between Washington and Moscow over the past few years has put further cooperation in question. Russian leadership has at times given signals that they are thinking of ending the cooperation (Reuters, 2021).

A fascinating case of the interplay between global politics and the ISS is the role of China. Beijing had tried for years to become a part of the space station, to no avail. NASA has been following an exclusionary policy against China for some time, citing worries about technology transfer (Moltz, 2011). An understandable concern, one that was also underlined in the case of Russia's accession into the program. Russian involvement in the project however is a fact, despite fears of technology transfer. This shows that the policy towards China may be grounded in other aspects, such as in blocking the prestige stemming from participation or trying to keep American dominance and not give in to the rising superpower.

The International Space Station has therefore been an object in international politics for over 20 years, witnessing many events and changes on Earth, especially in the political domain. The future of the station remains in question, with Russia's growing hesitancy to continue the programme and the growing technical issues in recent years. It has been, and remains, a symbol of cooperation in space, built during times of global post-Cold War optimism.

China's Tiangong station

In April 2021, China launched the Tianhe module – the first building block in their new manned space station. Beijing had previously launched two smaller space laboratories as parts of the wider Tiangong space station programme, yet the Tiangong space station will be assembled throughout 2021 and 2022 and will be the culmination of the whole Tiangong programme. It will be made up of at least three primary modules, with more possibly being added to the future (Jones, 2021b). Its mass and size will be much smaller than the ISS, but more sophisticated in terms of technology, which will allow state of the art research and a continuous habitable environment for three people. The question to ask is: why is this so important for international politics?

First, the Tiangong space station will be China's first true permanent space station in Earth orbit, with the previous Tiangong-1 and -2 serving rather as tests for Chinese capabilities. As a result, the permanent space station will be the beacon of Beijing's technological capabilities in outer space, similarly as the ISS was for the US. China's space programme has always had a focus on prestige, both domestic and international (Sheehan, 2011). Thus, Tiangong will be the next step in showcasing the country's development through the years.

The prestige element is crucial in understanding the interplay between space stations and global politics. With the shifting balance of power, prestige plays an important role in determining who is seen as the leader in various areas,

such as technology. Developing a completely new permanent and crewed space station is a good indicator of China's ambitions in international relations, especially when one compares it to the ISS, which has been suffering paralysing technical issues (BBC, 2021).

Second, although not multinational in nature as the ISS is, Beijing does envision international cooperation on the Tiangong space station. Up to date, many nations and organisations have stated their desire to take part in the venture, including the European Space Agency (The Guardian, 2021) and Russia (Jones, 2021a), with experiments from a multitude of research institutions from various countries to be carried out on the station (Mallapaty, 2021). Establishing international collaboration on the Tiangong station would be highly beneficial to China from a political perspective for two reasons: (i) China would show that they are building a new international coalition in space, affecting the balance of power in orbit and (ii) Beijing could use the space station as a tool in its diplomacy, as the US has with the ISS. The second aspect may become significant if the ISS would be decommissioned in the near future and the Tiangong station would become the sole permanent station in orbit, therefore conditioning access to the station based on favourable policies towards China.

The Tiangong station is therefore a contemporary example of how politics and space stations interact with each other. The station is a representation of Chinese ambition in global politics, showcasing the technological advancements the country has made. Although still in the making, Tiangong is already becoming a crucial aspect of global space politics.

Competing for dominance

The shifts in the balance of power across the world, especially the rivalry between the US and China, have a direct impact on what is happening in our orbit, space stations not being exempt. Recently, NASA has been urged to not leave a "space station gap" after the ISS will be decommissioned (Foust, 2021). The space agency is currently looking at possibilities of commercial space stations in Low Earth Orbit (LEO), the same orbit the ISS and Tiangong stations use. Nonetheless, if the ISS programme were to end in the near future, Washington would have issues regarding their position in space, as Tiangong would be the only permanent space station in orbit. This could cause serious image problems for the US, contrasting with China and its new state of the art station.

It may be that space stations are a representation of the current balance of power in Earth orbit. The International Space Station emerged during a time of US dominance on the global political scene, unifying old allies and former adversaries under its leadership. The stability of the programme began to decay when Russia's geopolitical goals came into play, thus souring the relationship between Washington and Moscow. Furthermore, the rise of China and other actors began a shift in the balance of power, which was also seen in space through the ambitions China placed in their space programme. It is difficult not to see the symbolism of a decaying ISS under American leadership and a materialising Chinese Tiangong with more and more countries wishing to participate in the programme.

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About the author:

Aleksander M. Lubojemski is a policy analyst in the private sector and a postgraduate student at the London School of Economics focusing on international relations history and theory. He has an interest in IR theory, space policy and how technology influences global politics. He has previously completed internships in the government institutions.