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Combining Competition and Cooperation: A Guide to U.S. Space Relations

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Introduction

When discussing the realities of the future of our planet, it is imperative to consider what weapons the conflicts of the future may be waged with. While man has long fought on land, sea, and sky, future conflicts very well could be in space.

Given the potential for space conflict, states have begun developing space for military purposes, requiring consideration on whether or not these operations should be permissible. The exploration of space will continue to occur; the question remains whether it will be a competition or a collaboration. The future of space is like all future endeavors: uncertain, and as such, the United States would do well to hedge its bets and be prepared to embrace both, through a combination of competition and cooperation to better its situation among the stars.

The first question to ask when considering this endeavor of exploration is whether an arms race in space would be anticipated or desired. This is completely conditional upon the actors that can initiate it, and by most indications, the current U.S. administration intends to do so. The Trump administration has not only created a new Space Force but has declared there to be a new space race. The administration has also recently withdrawn from the Open Skies Treaty: a treaty that would best be bypassed through the utilization of reconnaissance satellite platforms in space, as it pertains to the overflight of reconnaissance aircraft.[1] Of course, while Trump's doctrine will direct American policy for the near future, the potential for a space race will also be heavily guided by the actions of other nations. This primarily includes China as a top competitor due to its technological advancements and current role within the Sino-American great power competition.[2] Within the United States, debates continue between those who follow brown water doctrine–that space power ought to focus on the potential for warfare and general order in outer space–and blue water doctrine–that space power ought to focus on supporting the commercial use of space.[3] This is allowed and encouraged by the SPACE Act of 2015, which allows for commercial exploitation of space by Americans.[4] These doctrines primarily compete with one that supports a more cooperative space with global involvement, but the doctrine that will prevail remains uncertain.

Competition

While the future of space is far from certain, there are benefits to investing into a modern-day space race. America can benefit strategically from more advanced technological innovation in a shorter period of time; from upgraded offensive and defensive military capabilities, and a climate more suitable for strengthening the United States' relationship with its allies.

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[1] Jim Garamone, "Trump Signs Law Establishing U.S. Space Force," U.S. DEPARTMENT OF DEFENSE, December 20, 2019, https://www.defense.gov/Explore/News/Article/Article/2046035/trump-signs-law-establishing-usspace-force/.; Mike Wall, "US Is in a New Space Race with China and Russia, VP Pence Says," Space.com, Space, March 27, 2019, https://www.space.com/new-space-race-moon-mike-pence-says.html.; "The Open Skies Treaty at a Glance," Arms Control Association, May 2020, https://www.armscontrol.org/factsheets/openskies.

[2] Elbridge A. Colby and A. Wess Mitchell, "The Age of Great-Power Competition," Foreign Affairs, December 10, 2019, https://www.foreignaffairs.com/articles/2019-12-10/agegreat-power-competition.

[3] Peter Garretson, "A Historic National Vision for Spacepower," War on the Rocks, September 9, 2019, https://warontherocks.com/2019/09/a-historic-national-vision-forspacepower/.

[4] Kevin McCarthy, "Text - H.R.2262 - 114th Congress (2015-2016): U.S. Commercial Space Launch Competitiveness Act," November 25, 2015, https://www.congress.gov/bill/114th-congress/house-bill/2262/text.

When examining a future space race, it is critical to examine the nature of the United States' prior military competition. On Earth's surface, the Cold War was a battle of power by means of nuclear proliferation, espionage, and proxy wars. Above the stratosphere, the Space Race was a challenge of scientific innovation. While tensions remained relatively high between Cold War superpowers on the ground, the Space Race was much more competition than direct conflict. This competition created a back-and-forth that pushed the United States to increase its technological capabilities in order to stay ahead.[5] Whether through the Strategic Defense Initiative, better known as Star Wars, or through anti-satellite (ASAT) tests of the 80s, the U.S. has striven to maintain an edge.[6] This concept can translate into a contemporary space race as well. More and more nations are capable of the technology of space travel than ever before, allowing for a larger pool from which advancements can come from and in which competition can occur. In a modern age where the ability of private companies in the space technology market is comparable to, if not greater than, the state-run space programs, this is even more apparent. These improvements not only mean better technology for government-run or funded programs, but also better-performing, faster, lighter, and more compact technology in non-outer space technology, due to the trickle-down effect of technology from the defense sector to the private sector. The commercial competition also allows for innovation of technology that would not have otherwise been created like ARPANET.[7]

This competition did not end with the Cold War however, as even the Obama administration classified space strategy as contested, competitive, and congested, commonly referred to as the three C's. The trend of the past decade is a contested space filled with many more space capable nations, increasing the congestion above the atmosphere and the stakes of an ever-expanding space competition, or race. This take had a heavy emphasis on the competition of space and has served the U.S. well in the past decade.[8]

This competition brings more than just economic benefits, however; American military capabilities stand to benefit from a space race. However, despite its current importance, policy makers are paying little regard to space policy. While the recent formation of the Space Force has made strides toward making space more of a priority, the branch lacks the structure and funding necessary to achieve its important goals of maintaining a leading role in space.[9] A space race could provide the necessary motivation on the part of policymakers to increase funding and

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[5] Charles D. Lutes et al., "Commercial Space and Spacepower," *Toward a Theory of Spacepower: Selected Essays*, Washington, DC: National Defense University Press, 2016, https://ndupress.ndu.edu/Portals/68/Documents/Books/spacepower.pdf

[6] "Vought ASM-135A Anti-Satellite Missile," March 14, 2016. https://www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Display/Article/198034/asm-135-asat/; Joan Johnson-Freese, "The Viability of U.S. Anti-Satellite (ASAT) Policy: Moving Toward Space Control," *INSS Occasional Paper 30, Space Policy Series*, Jan. 2000, https://www.hsdl.org/?view&did=487481.

[7] "The Computer History Museum, SRI International, and BBN Celebrate the 40th Anniversary of First ARPANET Transmission," CHM, October 27, 2009, https://computerhistory.org/press-releases/museum-celebrates-arpanet-anniversary/.

[8] "2011 National Security Space Strategy- UNCLASSIFIED," U.S. Department of Defense, January 2011, https://archive.defense.gov/home/features/2011/0111_nsss/docs/NationalSecuritySpaceStrategyUnclassifiedSummary_Jan2011.pdf, 1-3.

[9] Keith Zuegel, "Funding Two Military Services - with the Resources for One - Risks Both," Defense News, May 19, 2020, https://www.defensenews.com/opinion/commentary/2020/05/19/funding-two-military-services-with-the-resources-for-one-risks-both/.

subsequently increase the capability of the Space Force. It is easy to see how a space race would push forward military offensive capabilities, but most importantly, it would also aid the United States' defensive capabilities. This would mean better protection of U.S. satellites, which play an important role in national security on the ground including communications, missile warning systems, imagery surveillance, the GPS system, and weather monitoring, among other capabilities.[10]

Other nations are surging forward in a quest to develop satellite killing technology to close the gap to U.S. superiority with ASAT weapons. Russia has been pursuing recent ASAT capabilities, including an airborne laser system able to target missile defense systems. China has been training military units to utilize its ASAT missile systems, capable of attacking LEO (low earth orbit) satellites.[11] India has even tested its own kinetic kill vehicle last year, and is now capable of producing more of the weapons that can take down satellites up to 1000 km above Earth.[12] Currently, the only kinetic capability for anti-LEO satellites that America possesses is repurposing the AEGIS system intended to intercept ballistic missiles, which was tested in 2008 against a U.S. satellite.[13] Without significant investment in satellite defense programs or better purpose built ASAT programs for deterrence, the United States will not be adequately prepared to tackle space.

Aside from improved technological capabilities, a space race would provide an ideal climate for creating tighter diplomatic relations with American allies. While one could argue that such an arms race would destroy any hope at global space cooperation, such a belief is unfounded. Like it or not, competition in space has already begun and is unlikely to reduce in any capacity as more contenders vie for more control. Currently, there are rising threats in space from the Chinese and Russian governments that would be magnified through a space race. In light of this, American allies would not only be willing to increase partnership with U.S. space defense efforts, but also be willing to help enhance combined capabilities. Currently, the U.S.-led Combined Space Operations Center currently works with close allies of Australia, Canada, the United Kingdom, France, Germany, and New Zealand, as well as cooperation with other NATO allies. This cooperation can only increase with a larger and more rapidly increasing threat. While space partnerships are already more developed between America and the other Five Eyes nations–Canada, the United Kingdom, Australia, and New Zealand–the U.S. can benefit by developing its ties with other potential allies, such as the growing space power of India. India has developed ASAT capabilities and already established itself as a space rival to China, making it a prime candidate for partnership to combat Chinese aggression in space.[14] Japan is another nation whose existing partnerships with the United States, coupled with its existing space programs, can

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[10] Ibid.

[11] Defense Intelligence Agency, "Challenges to Security in Space," DIA, January 2019, https://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Space_Threat_V14_020119_sm.pdf.

[12] Rahul Udoshi, "Defexpo 2020: DRDO Says ASAT Weapon System Is 'Ready for Further Limited Production'," Janes.com (Jane's Find unrivaled intelligence, consultancy and advertising solutions to the defence and national security sectors.), February 7, 2020, https://www.janes.com/defence-news/news-detail/defexpo-2020-drdo-says-asat-weapon-system-is-ready-for-further-limited-production.

[13] Laura Grego, "The AntiSatellite Capability of the Phased Adaptive Approach Missile Defense System," 2011, https://fas.org/pubs/pir/2011winter/2011Winter-Anti-Satellite.pdf, 2-3.

[14] Sandra Erwin, "New Studies Provide Fresh Insights into the Escalating Space Arms Race," SpaceNews.com, April 4, 2019, https://spacenews.com/new-studies-provide-fresh-insightsinto-the-escalating-space-arms-race/.

help to counter Chinese advances.[15] These relationships in space can also have the effect of increasing cooperation on Earth, as well as increasing the United States' world standing.

Cooperation

While there are certainly positive aspects to a second space race, there are a plethora of detractors as well. In all facets of geopolitical considerations, a space race could adversely affect the United States by increasing tensions in the growing Great Power Conflict, costing exorbitant amounts of capital; and most crucially it may not be a race that the United States can win.

There is a new era of great power competition sweeping over Earth.[16] With an increasingly belligerent Russia, a China with hegemonic aspirations, and nuclear proliferation by a number of less stable regimes, the world is an increasingly volatile place to carry out geopolitics. By starting a new arms race, not to mention one in a virtually unexplored domain, one could hardly expect this volatility to decrease. During the Cold War nuclear arms and first space race the world was under constant fear of a nuclear holocaust. By stoking the fears of autocratic rivals in Russia and China that expect aggression from the U.S., the United States would play increasingly into the hands of its adversaries by kicking off an arms race in space, losing a credible claim to peacebuilding among allies and concerned third parties alike. Space will very likely be weaponized at some point, however that does not necessitate a mad rush with little concern for the environment, stability, and world peace in the process. Diplomatically speaking, an arms race would be detrimental to U.S. credibility and would unnecessarily provoke American adversaries.

The financial costs of a space race would be staggering, a sum that an already overextended U.S. budget could ill afford to handle. By adding an additional domain to fund that would dwarf air, sea, land, and cyber costs by countless zeros, it would add insult to injury on the financial status of the country. Admittedly, the financial costs of the two races in the past were not without benefits, with technology spanning a wide range of fields, including LEDs, memory foam, and countless other innovations being developed through the funding of space exploration, tech that may have never been developed otherwise.[17] In the present moment, however, with much of advanced dual-use technology being fulfilled by private ventures, a new space race funded by taxpayers may not be necessary to accomplish technological innovation.[18] Even if an arms race is the only catalyst for progress and innovation, is it worth the potential conflict?

Finally, the last reason, and by far the most pertinent, is the fact that this arms race may not be one the United States can win. China is a leading space power, one of only three countries to place a man in space, and its massive state-run economy can subsidize space weaponization

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[15] Todd Harrison et al., "SPACE THREAT ASSESSMENT 2020 - Aerospace Security," Aerospace Security, Center for Strategic and International Studies, March 27, 2020, https://aerospace.csis.org/wp-content/uploads/2020/03/Harrison_SpaceThreatAssessment20_WEB_FINAL-min.pdf, 51.

[16] Elbridge A. Colby and A. Wess Mitchell, "The Age of Great-Power Competition," Foreign Affairs, December 10, 2019, https://www.foreignaffairs.com/articles/2019-12-10/agegreat-power-competition.

[17] "NASA Technologies Benefit Our Lives," NASA, accessed May 21, 2020, https://spinoff.nasa.gov/Spinoff2008/tech_benefits.html.

[18] Stephen J. Markovich and Andrew Chatzky, "Space Exploration and U.S. Competitiveness," Council on Foreign Relations, September 10, 2019, https://www.cfr.org/backgrounder/space-exploration-and-us-competitiveness.

with consummate ease compared to America's buckling financial burden.[19] By committing to this race, the United States may very well be serving the same function that the Soviet Union did with the space race and arms race, that of a slowly declining power being bled of what financial capacity it had en route to a long term collapse. If the United States commits to this race, not only could it very conceivably lose, but it might just ruin its status as a superpower for decades or even centuries to come. By overemphasizing the Obama era three C's doctrine of competition, stated in an age where America had an unquestionable "overall edge in space capabilities" it is easy to lose sight of the merits of cooperation. American technology is, for now, still the best in the business, and to ensure this, safeguards must be put in place to disincentivize weaponization in space, taking away the belligerent nations' advantage.

Conclusion

One possible safeguard to prevent an arms race for space would be more treaties like the Outer Space Treaty (1967) or the proposed Prevention of an Arms Race in Space (PAROS) resolution currently in the U.N.[20] While historically these treaties have been opposed by the United States and ardently pursued by nations such as Russia and China (who feared the United States gaining a distinct advantage on future battlefield), the United States should look to these treaties as an effort to stave off future concerns of the same variety. Barring a cataclysmic shift, there is a very good possibility that the future of space belongs to China, as mentioned before.[21] With this possibility, it would behoove the United States to either massively ramp up funding to stay ahead of these adversaries (which is impossible) or try to mitigate its advantage by seeking to disarm space permanently, as a way to use American terrestrial military advantage. With stricter international constraints being placed on space, it can be left for science and commerce to seek the betterment of mankind. Potentially there will be an additional space race to colonize Mars or mine the Moon, but it will not be one of exorbitant defense spending in order to maintain an advantage on Earth.

Irrespective of the results, America's response to the space challenge of the next years and decades will chart the course of the United States for the foreseeable future. While the Obama administration had their three C's, there are three new C's to define the correct approach to space: Combining Competition and Cooperation. The decision today to pursue space as a field of cooperation, seeking mining of the Moon, colonization of Mars, and other feats as a global endeavor, or to see space as the next battlefield between China and other great powers, will certainly influence policy for years to come. By seeking a course of consolidation, pursuing cooperation where possible and competition where advantageous, America can both ensure its place on the world stage and remain a paragon of science in the 21st century.

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[19] Alexander Bowe, "China's Pursuit of Space Power Status and Implications for the United States," Washington D.C.: U.S.-China Economic and Security Review Commission, April 11, 2019, https://www.uscc.gov/sites/default/files/Research/USCC_China's%20Space%20Power%20 Goals.pdf), 2.

[20] David C. DeFrieze, "Defining and Regulating the Weaponization of Space," National Defense University Press, July 1, 2014, https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly74/Article/577537/defining-and-regulating-the-weaponization-of-space/; "Proposed Prevention of an Arms Race in Space (PAROS) Treaty," Nuclear Threat Initiative - Ten Years of Building a Safer World, accessed May 21, 2020, https://www.nti.org/learn/treaties-and-regimes/proposedprevention-arms-race-space-paros-treaty/.

[21] Alexander Bowe, "China's Pursuit of Space Power Status and Implications for the United States," Washington D.C.: U.S.-China Economic and Security Review Commission, April 11, 2019, https://www.uscc.gov/sites/default/files/Research/USCC_China's%20Space%20Power%20 Goals.pdf), 12.

Bibliography

Bateman, Aaron. "America Needs a Coalition to Win a Space War." War on the Rocks, April 29, 2020. https://warontherocks.com/2020/04/america-needs-a-coalition-to-win-a-space-war/.

Bowe, Alexander. "China's Pursuit of Space Power Status and Implications for the United States." Washington D.C.: U.S.-China Economic and Security Review Commission, April 11, 2019. https://www.uscc.gov/sites/default/files/Research/USCC_China's%20Space%20Power%20Goals.pdf

Colby, Elbridge A., and A. Wess Mitchell. "The Age of Great-Power Competition." Foreign Affairs, December 10, 2019. https://www.foreignaffairs.com/articles/2019-12-10/age-great-power-competition.

Defense Intelligence Agency. "Challenges to Security in Space." DIA, January 2019. https://www.dia.mil/Portals/27/Documents/News/Military%20Power%20Publications/Space_Threat_V14_020119_sm.pdf.

DeFrieze, David C. "Defining and Regulating the Weaponization of Space." National Defense University Press, July 1, 2014. https://ndupress.ndu.edu/JFQ/Joint-Force-Quarterly-74/Article/577537/defining-and-regulating-the-weaponization-of-space/.

Erwin, Sandra. "New Studies Provide Fresh Insights into the Escalating Space Arms Race." SpaceNews.com, April 4, 2019. https://spacenews.com/new-studies-provide-fresh-insights-into-the-escalating-space-arms-race/.

Garamone, Jim. "Trump Signs Law Establishing U.S. Space Force." U.S. DEPARTMENT OF DEFENSE, December 20, 2019. https://www.defense.gov/Explore/News/Article/Article/2046035/trumpsigns-law-establishing-us-space-force/.

Garretson, Peter. "A Historic National Vision for Spacepower." War on the Rocks, September 9, 2019. https://warontherocks.com/2019/09/a-historic-national-vision-for-spacepower/.

Grego, Laura. "The AntiSatellite Capability of the Phased Adaptive Approach Missile Defense System," 2011. https://fas.org/pubs/pir/2011winter/2011Winter-Anti-Satellite.pdf.

Harrison, Todd, Kaitlyn Johnson, Thomas G. Roberts, Tyler Way, and Makena Young. "SPACE THREAT ASSESSMENT 2020 - Aerospace Security." Aerospace Security. Center for Strategic and International Studies, March 27, 2020. https://aerospace.csis.org/wp-content/uploads/2020/03/Harrison_SpaceThreatAssessment20_WEB_FINAL-min.pdf.

Johnson-Freese, Joan. "The Viability of U.S. Anti-Satellite (ASAT) Policy: Moving Toward Space Control." *INSS Occasional Paper 30, Space Policy Series*, Jan. 2000. https://www.hsdl.org/?view&did=487481.

Lutes, Charles D., Peter L. Hays, Vincent A. Manzo, Lisa M. Yambrick, and M. Elaine. Bunn. "Commercial Space and Spacepower". *Toward a Theory of Spacepower: Selected Essays*. Washington, DC: National Defense University Press, 2016. https://ndupress.ndu.edu/Portals/68/Documents/Books/spacepower.pdf

Markovich, Stephen J., and Andrew Chatzky. "Space Exploration and U.S. Competitiveness." Council on Foreign Relations. Council on Foreign Relations, September 10, 2019. https://www.cfr.org/backgrounder/space-exploration-and-us-competitiveness.

McCarthy, Kevin. "Text - H.R.2262 - 114th Congress (2015-2016): U.S. Commercial Space Launch Competitiveness Act," November 25, 2015. https://www.congress.gov/bill/114th-congress/house-bill/2262/text.

"NASA Technologies Benefit Our Lives." NASA. NASA. Accessed May 21, 2020. https://spinoff.nasa.gov/Spinoff2008/tech_benefits.html.

"Proposed Prevention of an Arms Race in Space (PAROS) Treaty." Nuclear Threat Initiative - Ten Years of Building a Safer World. Accessed May 21, 2020. https://www.nti.org/learn/treaties-and-regimes/proposed-prevention-arms-race-space-paros-treaty/.

"The Computer History Museum, SRI International, and BBN Celebrate the 40th Anniversary of First ARPANET Transmission." CHM, October 27, 2009. https://computerhistory.org/press-releases/museum-celebrates-arpanet-anniversary/.

"The Open Skies Treaty at a Glance." Arms Control Association, May 2020. https://www.armscontrol.org/factsheets/openskies.

"2011 National Security Space Strategy- UNCLASSIFIED." U.S. Department of Defense, January 2011. https://archive.defense.gov/home/features/2011/0111_nsss/docs/NationalSecuritySpaceStrategyUnclassifiedSummary_Jan2011.pdf.

Udoshi, Rahul. "Defexpo 2020: DRDO Says ASAT Weapon System Is 'Ready for Further Limited Production'." Janes.com. Jane's Find unrivaled intelligence, consultancy and advertising solutions to the defence and national security sectors., February 7, 2020. https://www.janes.com/defence-news/news-detail/defexpo-2020-drdo-says-asat-weapon-system-is-ready-for-further-limited-production.

"Vought ASM-135A Anti-Satellite Missile," March 14, 2016. https://www.nationalmuseum.af.mil/Visit/Museum-Exhibits/Fact-Sheets/Display/Article/198034/asm-135-asat/.

Wall, Mike. "US Is in a New Space Race with China and Russia, VP Pence Says." Space.com. Space, March 27, 2019. https://www.space.com/new-space-race-moon-mike-pence-says.html.

Zuegel, Keith. "Funding Two Military Services - with the Resources for One - Risks Both." Defense News, May 19, 2020. https://www.defensenews.com/opinion/commentary/2020/05/19/funding-two-military-services-with-the-resources-for-one-risks-both/.