Annotated Bibliography

5th Annual Workshop on Space and U.S. Defense Strategy

Center for Global Security Research
Livermore, California, October 16-17, 2023

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Key Questions:

- Is US space strategy well integrated with US defense strategy?
- How can space support US objectives across the conflict continuum?
- What does and should space contribute to US defense, deterrence, and peacetime competition objectives?

Panel Topics:

1. The “Pacing Challenge:” Understanding China’s Decision-Makers
2. Space and “Peacetime” Competition
3. Space and Militarized Crises
4. Space and Regional Wars with Major Power Rivals
5. Space in Deterrence Campaigns
6. Risk Reduction and Strategic Stability in Space
7. How Much Offense is Enough?
8. Getting the Political Strategy Right

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Panel 1: The “Pacing Challenge:” Understanding China’s Decision-Makers

- How does space fit in their grand strategy?
- How do they think about war in space?
- What do they value (that we can put at risk)?
- How much military and political risk are they willing to accept?


This CNA report analyzes recent writings from China and the PLA to identify major takeaways or developments in Chinese thinking on concepts of deterrence, strategic stability, and escalation control. Overall, these documents illustrate a mounting concern that strategic stability is under threat from landmark innovations in military technology and capabilities in recent decades. Indeed, many Chinese authors contend that such changes in the balance of military capabilities demands the expansion of their historically small nuclear deterrent in order to prevent strategic attacks on China, though nuclear parity is considered unnecessary. In this context, recent PLA force modernization decisions can be interpreted as efforts to reinforce asymmetric strategic stability, perceived as being undermined by U.S. behavior. However, this ambition is still tapered by a relatively strong commitment to maintaining No First Use, as well as a debate over the strategic end-state of China’s nuclear arsenal vis-à-vis size, composition, and delivery platforms.


Given the growing strategic implications of U.S. competition—and potential conflict—with China in space, this RAND study examines how deterrence strategies might be adapted and tailored to incorporate both the space domain’s unique nature as well as Beijing’s particular space ambitions. A review of classical deterrence theory and an examination of Chinese objectives in space informed several key takeaways for deterring China in space. First, more broadly, effective space deterrence requires credible response capability across domains, as well as the development of behavioral norms tailored to China. Beijing perceives significant benefits from controlling the space domain, so effective deterrence will mean imposing extraordinary costs for space aggression. Further, China considers space to be a critical U.S. dependency and vulnerability, raising the likelihood of attack while emphasizing the importance of highlighting Chinese space reliance. The authors recommend the United States, with increased involvement from allies and partners, act to rebalance these perceptions and calculations.

The 2022 China Military Power Report examines trends in China’s military and security ambitions—namely the amassing of national power to influence the international system into alignment with their interests. This has manifested through more coercive military behavior, intensified pressure against Taiwan, as well as significant investment in the strength of PLA’s multi-domain strategic deterrence capabilities. These inform the PLA’s future notion of “systems destruction warfare” and their emergent “multi-domain precision warfare” operational concept, which involves identifying vulnerabilities in adversaries’ operational systems across domains and launching precision kinetic or non-kinetic strikes against them. This concept drives their continued development of counterspace capabilities, which would facilitate PLA control of the space-enabled information sphere, critical for executing modern informationized/intelligentized warfare. Alongside these developments are technological improvements in space-based ISR, communications, and navigation, and an emphasis on space operations as means to deter third-party intervention in regional conflict.


This report from Japan’s National Institute for Defense Studies characterizes the PLA’s joint operations capabilities and strategies by examining how they have developed since the 1990’s. For this, Yasuyuki explored the concept’s recent evolution, the achievements of PLA’s joint operations structure, the development of joint operations education and training, and Party-Army relations. The PLA’s integrated joint operations (IJO) concept—devised to adapt to U.S. military strategy and technology—seeks to combine traditional military priorities with innovations like long-range precision strike and intelligentized warfare. To realize this concept, the PLA developed an IJO structure that importantly includes joint operations training and personnel cultivation to both execute the IJO concept and maintain Party-Army relations. While these reforms have unlocked several accomplishments, many challenges remain, like organizational coordination, recruiting and developing skilled personnel, and command authority. These considerations should be monitored alongside more traditional indicators like defense spending and fielded technologies.

Panel 2: Space and “Peacetime” Competition

- What are US competitive goals in space and with space?
- What is the place of space in the strategy to build enduring strategic advantages?
- How can the private sector be unleashed toward this purpose?
- How much should the US ask of its allies and how can it improve their integration?

In this Atlantic Council brief, Eftimiades considers the benefits of allied integration for space security operations and the existing obstacles to such integration, ultimately recommending U.S. action to improve collaboration and potential interoperability with spacefaring allies. Against the backdrop of a rapidly changing space security environment, he argues that increased allied coordination would importantly shift adversaries’ deterrence calculus, unlock geostrategic locations for ground-based SDA, enable burden-sharing, enhance global norms and crisis management, and improve the resiliency of space architectures and the allied industrial base. The United States and allies should build upon existing efforts, but bureaucratic, classification, strategic, and logistical impediments prevent the benefits of fully realized integration. Among other recommendations to overcome these obstacles, the author argues the U.S. Space Force should clarify to allies where American capabilities needs gap-fillers and holistically examine internal obstacles to space security collaboration.


Hill’s chapter foundationally contends that, like every other domain, increased activity in and mastery of the space environment will inevitably encompass behavior that risks human conflict, and DOD’s competitive mission must ensure the advantages of space-based capabilities in deterring conflict, but also in fighting and winning conflicts should deterrence fail. The explicit recognition and reorientation of space as a warfighting domain is a first step, but integrating space defense strategy with the overall national deterrence mission remains critically important. The author elaborates that this overarching strategy depends on the maintenance of space-based capabilities that support the potential imposition of unacceptable costs on an aggressor and victory in conflict. Moreover, it demands innovative approaches to ensuring space architectures and drawing on commercial and allied partnerships. Lastly, though formal space arms control remains fraught with challenges, this integrated strategy should involve shaping the space operating environment to limit the risk of misperceptions, miscalculations, and escalation while preserving the sustainability of space for all.


The Chief of Space Operations’ “competitive endurance” concept provides a governing framework—or theory of success—for Space Force operations directed at deterring space conflicts and cementing U.S. space superiority. Competitive endurance is anchored by three central tenets: space domain awareness, deterrence through resilience, and
balancing sustainability and stability with counterspace campaigning. Effective space domain awareness importantly limits the possibility of operational surprise, and is being pursued through significant investment in improved sensors, data management, and decisional support. Building more resilient, redundant, and easily reconstituted space architectures will deny destabilizing first-mover incentives by making effective counterspace attacks infeasible or even self-defeating for adversaries. Lastly, competitive endurance recognizes the potential value of counterspace operations in protecting critical space-based infrastructure, but also that such campaigning must be practiced responsibly and sustainably to preserve the domain.


This overview outlines how USSPACECOM will collaborate and integrate with commercial partners to resolve capability gaps, improve architecture resiliencies, and maintain technological and operational superiority across the conflict continuum. This framework revolves around three distinct approaches, with the first emphasizing accelerated acquisition and technology refresh through the purchase of commercial, off-the-shelf products for specific USSPACECOM system requirements. Second, integration as a service approaches like contracts and leases can supplement existing, product-oriented procurement practices and quickly support certain operational gaps. The final tier prioritizes the leveraging of industry expertise through more relational partnerships—versus merely transactional arrangements—that unlock short and long-term benefits for both USSPACECOM and the commercial industry.

**Panel 3: Space and Militarized Crises**

- What does space contribute to stability and instability in a complex crisis?
- What dilemmas can we present to our adversaries in and with space? And they to us?


Bahney’s chapter explores the evolving position of space in U.S. strategic posture and the implications of intensifying competition expected in coming years given Russian and Chinese deployment of destabilizing counterspace weapons. First, the paper establishes the increasing strategic reliance of the United States, China, and Russia on space as a core enabler of military forces and posture. Then, the shifting terms of competition are outlined through an analysis of architecture resiliency and counterspace capabilities, culminating in projected a net assessment of space posture and power come 2030. Here, conclusions are drawn about how increased space symmetry could enhance stability, with large-scale counterspace attacks—the only ones notionally capable of significantly
compromising highly resilient architectures—becoming less appealing and exceedingly escalatory. The piece then contends that the United States should pursue strategic stability by improving its competitive response to adversaries’ space ambitions, powered by partnerships and interoperability with allies.


This paper explores the distinctive qualities of the space domain vis-à-vis crisis stability, offense, and defense, structured as six overlapping propositions. First, the author recognizes that actions in space are never isolated, and that while instability in traditional domains could drive space-based conflict, the inverse remains unlikely. Next, he examines the incentives for preemption and prevention and the escalation relationship between space and terrestrial conflict, concluding that the minimal direct bloodshed involved in space conflict lowers the cost of deterrence failures as well as the incentives for (first strike) restraint. Space’s lack of territoriality yields unique—versus other domains—definitions of offense and defense, but space power’s offense-dominance at the tactical level further degrades crisis stability. Strategically, however, the offense-defense balance is more contingent on external factors, impacting crisis stability in unique and often conflicting ways.


In this chapter, Grego examines space security through the lens of the risks space activities pose to crisis stability—ultimately identifying which space operations and strategies appear most dangerous, how space influences crisis stability, and what measures show promise for mitigating crisis situations. The piece outlines the factors that inherently contribute to crisis instability in space: the vulnerability of satellites and the generation of first-strike incentives, the relatively compressed timelines and challenges with attribution, increasing entanglement of nuclear and conventional capabilities, issues of misperception and dual-use technologies, and an overall dearth of understanding and experience. To ameliorate the destabilizing effect these factors could have in military crises, Grego offers a slate of policy recommendations that includes high-level arms control discussions, the reduction of first-strike incentives, improvements in space situational awareness, as well as the creation of confidence-building measures and clear behavioral norms.

This RAND report provides a framework for understanding how deterrence extends to space, characterizing how deterrence strategies differ, and illuminating how nations might operationalize those strategies to prevent attacks on critical space-based assets. For this, the authors examined foundational deterrence literature, applicable lessons from the nuclear and cyber domain, various national perspectives on space deterrence, and methods for evaluating deterrence effectiveness. The framework revolves around three archetypes: (1) denial dominant (emphasis on stealth and defensive resilience to convince adversaries their attacks would realize no/little benefit and some costs, plus heavy norms), (2) offense dominant (emphasis on counterspace capabilities to convince adversaries their attacks would incur extraordinary retaliatory costs, with few norms), and (3) mixed deterrence (blend of resilience/defense with active defense/counterspace capabilities, with some focus on norms). The report concludes that more comprehensive and mixed approaches appear most promising, though any strategy is heavily contingent on cross-domain influences, information and resources, and signaling effectiveness.

**Panel 4: Space and Regional Wars with Major Power Rivals**

- How can Blue ops in space advance Blue objectives in regional war?
- How can Red ops in space advance its objectives?
- How dependent will Blue and Red be on space to enable terrestrial operations?
- Do some capabilities contribute more to conflict de-escalation than others?


Burbach identifies four central takeaways from Russia’s war in Ukraine—perhaps the first two-sided space war—that could inform planning for potential future space conflicts. First, even without owning space capabilities, combatants like Ukraine can still effectively conduct space-enabled battlefield operations by accessing the *products* of space systems. Next, Russia’s counterspace operations have shown the importance of cyber and electronic warfare over kinetic attacks. Third, the unprecedented role of Starlink and commercial imagery creates uncertainty over the legitimacy of private satellites as military targets, as well as over the escalatory implications of such attacks. Lastly, although the Ukraine War has confirmed deficiencies in Russian space capabilities, this advantage would not be as clear against China. The author concludes with policy recommendations relating to each takeaway.


The author explores whether threats of cost-imposition in space might have deterrent effects on adversary behavior across domains, and how these dynamics might materialize
in practice. Examining space deterrence-by-punishment in a hypothetical war with China over Taiwan, Manay establishes the imposed cost of counterspace operations as information brownout—degrading or destroying China’s space-based information infrastructure. The severity of these brownouts would be highly contingent on several factors like Red’s system resiliency, scale of attack, and risk of inadvertent escalation. The article concludes that counterspace attacks offer little to the integrated deterrence-by-punishment toolkit as either imposing minimal costs or exacerbating the situation with misperception risks from undesirable information brownout effects. Significant counterspace attacks on civilian infrastructure—akin to economic sanctions or blockades—could prove valuable but run counter to U.S. posture and norms.


In this Mitchell Institute paper, Ryan discusses the importance of space in the realization of JADC2—and joint all-domain operations—which will prove critical to maintaining a comparative warfighting advantage over China. The core functionalities of JADC2—information collection, transmission, processing, and direction—are dependent on space-based systems that are uniquely capable of moving data at the necessary speeds, scales, and distances. The author argues that prevailing in regional conflict with great power rivals—particularly with China in the Indo-Pacific—will require that the DOD and USSF prioritize robust space infrastructure as well as the space superiority to protect said capabilities. Indeed, pursuing both active and passive defense measures will prove indispensable for protecting space architectures that underpin JADC2 and enable cross-domain operations.


This article describes the proceedings and takeaways from a major wargame focused on a possible Chinese commercial blockade of Taiwan, ultimately involving Chinese threats and eventual attacks against U.S. and Japanese satellite infrastructure. In a plenary hotwash session, the game’s participants identified four key conclusions. First, China will soon develop new co-orbital anti-satellite threats that threaten U.S. and allied access to orbits and cislunar space, potentially demanding pre-positioned bodyguard satellites. Second, greater attention should be directed toward the role commercial space systems will play—both as enablers and targets—in space conflict. Third, The United States should only forge space agreements with China or Russia if provisions are clearly enforceable, each party retains unilateral protection rights, and enforcement actions are proportional. Lastly, effectively countering China in space—to either deescalate or prevail—demands improved quantities and quality of coordination between the United States and its spacefaring allies.
Panel 5: Space in Deterrence Campaigns

- What is deterrence campaigning?
- How can deterrence campaign planners better integrate space?
- Are there specific campaigns we should consider to shape the space domain?


Workshop participants concluded that the United States is ill-equipped—both conceptually and operationally—to deter hostility by power rivals in the space domain. First, the United States lacks proper attribution capabilities as well as offensive counterspace systems to effectively threaten cost-imposing retribution. Furthermore, the Space Force lacks the acquisition agility to develop resilient space architectures capable of denying adversary attacks. Conceptually, the United States needs stronger foundations for space deterrence and counter-deterrence, as well as deeper familiarity with Russian and Chinese space strategy. To close these gaps for long-term deterrence campaigns, the United States must field capabilities and the speed of relevance, solidify a desired end-state for space deterrence, and answer critical questions regarding the ways and means of deterrence in space.


This paper considers areas where U.S. space forces could strengthen their deterrent effectiveness and identifies how shortcomings could be mitigated. The authors recognize an inherent tension at the heart of space deterrence—the necessity of transparency and signaling in strengthening deterrence, but also its potential for weakening the nation’s hand should deterrence fail. To effectively operationalize deterrence in space, the United States must develop an effective attribution system that convinces adversaries to expect punishment and retaliation against hostile space actions. This involves important decisions about which technical details of attribution should be released and to whom, closing paths to deterrence and assurance failures. To bolster deterrence by denial, U.S. space strategists should also evaluate options for communicating to adversaries—directly or indirectly—the resilience of U.S. space infrastructure and capabilities. Efforts such as public releases, demonstrations, or communications via diplomatic channels will strengthen the reputation of U.S. space systems’ ability to attribute and withstand counterspace attacks.

In light of renewed DOD attention and urgency surrounding multi-domain operations (MDOs) and multi-domain deterrence, Pearl and Radzinsky’s chapter explores the relationship between these concepts to recommend how MDOs—regularly enabled by space—might better advance MDD priorities. First, the chapter illuminates the role MDOs already play in some deterrence activities, but that such supporting operations are increasingly complicated by the growing complexity of conflict dynamics and means, particularly in the cyber and space domains. Turning to the relationship between MDOs and MDD, the authors emphasize the potential of MDOs in changing adversaries’ expected costs and benefits, the foundational calculation of deterrence. For improved MDD, the authors then recommend a shift in approach from one organized around developing particular capabilities towards a more scenario-based, objectives-oriented framework that includes MDD campaigns designed around these objectives.


Pham considers whether the United States has the necessary tools and engages in the proper operations to contest the battle space, protect national space interests, and deter aggression from adversaries. He argues that an effective space deterrence strategy requires shoring up deficiencies in communicating intent, building credibility through redlines, utilizing overt deterrent language, and cross-domain response options to exact retaliatory costs, deny benefits, and incentivize restraint. Cementing these recommendations, the author emphasizes the importance of active deterrence in space, building campaigns and operations that explicitly support the space deterrence mission. The article ultimately proposes that the Space Force and USSPACECOM adopt these active models to successfully operationalize and extend enduring deterrence principles into space.

Panel 6: Risk Reduction and Strategic Stability in Space

- What does and can arms control contribute to these objectives?
- What other approaches might be helpful?
- What can we learn from prior risk reduction endeavors that we can apply to space?


Dickey argues for U.S. leadership in the continued development of international space norms that could prove instrumental in enabling space deterrence, defense, and stability. The relative absence of space norms has contributed to a Wild West that breeds confusion and instability, especially in the fog of conflict, with no accepted standards for benign/threatening behaviors and insufficient communication lines for clearing up
misperceptions. Norms can also bolster coordination with allies by creating interoperability standards, improving information sharing, and mitigating “weak links”. And though norms might not themselves deter aggression, they establish clear standards for identifying hostile actions and applying rules of engagement, enabling international responses and strengthening deterrence. This argument situates norms as not in tension with military measures, but rather mutually complementary and reinforcing in the greater pursuit of U.S.-led strategic stability.


MacDonald et al. discuss the factors contributing to an increasingly unstable space environment, with a focus on intensifying strategic competition between the United States and China, and recommend actions for U.S. policymakers to mitigate these security risks. They identify three central and actionable drivers of strategic instability in space: (1) the entanglement of nuclear and conventional space infrastructure, (2) direct ascent ASAT testing, and (3) the rise of mega-constellation architectures. These dynamics—each highly intertwined with China—reflect the insufficiency of outdated space governance mechanisms to handle the shifting space domain. To rectify these shortcomings and build strategic stability, the United States should seek avenues for civilian space dialogue or cooperation with China, as well as develop disentangled architectures, continue pursuing a global ASAT testing moratorium, and study regulatory options for large constellations.


The authors contend that ongoing erosion of the Cold War-era arms control regime demands a full recalibration on measures promoting strategic stability, and they identify peacetime noninterference with national and commercial satellites as a potential way forward. Historically protected as technical means of treaty verification, satellites are still—and increasingly—critical for monitoring arms buildups and military mobilizations, which also makes them attractive targets. Though impossible to enforce in wartime, a principle of satellite noninterference in peacetime would benefit the United States, China, and Russia by protecting each country’s critical space infrastructure. Such an agreement would further promote mutual transparency, increase the barriers to war, establish standards for identifying and signaling hostile actions, and improve stability overall—both in itself and as a potential catalyst for future arms control efforts.

In this Project Ploughshares report, the authors construct a timeline of space-related arms control activities alongside key developments in space weapons and defense—beginning in 1955—to extract takeaways relevant for the present stalemate in space arms control. Informed by this historical account, the report examines major obstacles for additional arms control measures, including the absence of a definition for “peaceful purposes”, the intertwining of space with terrestrial arms competition, the vastly different technological interests and strategic priorities of spacefaring nations, and debate over how such rules should be developed and enforced. The authors conclude by reiterating the need for—and obstacles to pursuing—space arms control, and recommend that leaders and strategists look to experiences across history and other arms control arenas that serve as precedents for future progress.

Panel 7: How Much Offense is Enough?

- Is reversible capability enough?
- Is offense vs. LEO enough?
- How is the scale of the problem changing?
- Is there a role for space offense in crisis bargaining?


In this commentary, Bateman argues that kinetic counterspace weapons resembling those developed in the Cold War should not be pursued for protecting U.S. satellites against and/or deterring counterspace threats. Kinetic ASAT weapons generate significant amounts of dangerous orbital debris, which would in turn threaten the very satellites needing protection. Instead, in space, the United States should emphasize the development and fielding of non-kinetic, reversible weapons—like electronic warfare or cyber—capable of disabling adversaries’ space operations. These, combined with kinetic and non-kinetic attacks on ground facilities would prove sufficient to effectively respond to, deter, and/or neutralize adversaries’ counterspace attacks without endangering other satellites with debris. An international moratorium on kinetic ASAT testing would further bolster stability and protect the space environment from further degradation.


The latest Space Threat Assessment from CSIS catalogs space and counterspace capabilities worldwide, particularly highlighting the programs of China, Russia, India, Iran, and North Korea. This edition includes a dedicated analysis of the Russia-Ukraine war, where commercial space systems have played an unprecedented role, identifying unique takeaways for space-based strategic planning going forward. The report concludes by first emphasizing the vulnerability of space infrastructure across orbital regimes, given recent
space aggression from China and Russia. Lastly, the year-long absence of ASAT testing and perceived changes in adversaries’ deterrence calculus—particularly how much China has to lose—are identified as key dynamics to continue monitoring for appraising the threat environment in space.


In this Mitchell Institute policy paper, Galbreath argues that the U.S. Space Force should develop a toolkit of both offensive and defensive counterspace capabilities to protect critical space-based infrastructure. First, he underscores the supreme dependence of American joint force operations on unimpeded space activity and the significant threat posed by increasingly sophisticated adversary—particularly Chinese—space weapons. Characterizing ongoing U.S. efforts to propagate responsibility norms and enhance architecture resiliency as necessary but insufficient, Galbreath recommends the U.S. Space Force begin developing and fielding counterspace systems to deter and defend against Chinese hostility in space. Operationalizing this “responsible counterspace campaigning” will also require marked improvements in enabling missions—including space domain awareness, satellite operations, testing, and Guardian training—all demanding significant recapitalization and workforce growth.


This CSIS report explores the diverse arsenal of methods and capabilities that both Blue and Red spacefarers might employ to prevent counterspace attacks against critical space-based infrastructure. The authors identify the comparative advantages and constraints of both active and passive defenses across various crisis and conflict scenarios, building recommendations for U.S. policymakers. Recommendations from the report include: (1) prioritizing the improvement of space domain awareness capabilities; (2) enhancing space indicators and warning systems; (3) building modernized space architectures that distributed, proliferated, and diversified; (4) developing non-kinetic active defenses, such as onboard jamming and lasing systems, to thwart attacks against high-value satellites; (5) better integrating of DoD and commercial solutions; (6) understanding the risks of counterspace use and gray zone competition.

**Panel 8: Getting the Political Strategy Right**

- What is the right public narrative?
- What needs to be done to overcome the many barriers to success?
- Who must lead?
The Chief of Space Operations published three lines of effort (LoE) describing the key operational priorities considered essential to the success of the Space Force. The first, “Field Combat-ready Forces”, emphasizes the development of resilient, ready, and combat-credible forces prepared to outcompete rivals, deter aggressors, and defeat adversaries. Second, “Amplify the Guardian Spirit” prioritizes unleashing the innovation, commitment, and patriotism of the Space Force, celebrating the desired traits of public service, space-minded warfighting, and collaborative problem solving. Lastly, the “Partner to Win” LoE highlights the strengthening of partnerships—joint, international, interagency, academic, and commercial—that support USSF’s core structure, act as force multipliers, and deliver critical competitive advantages.

This memorandum establishes core tenets of responsible behavior in space with which DOD activity is expected to comply. The first tenet warns against conducting rendezvous or proximity operations that may harmfully interfere with non-U.S. Government spacecraft or increase the risk of collision. Adjacent to this principle are the following two tenets—limiting the generation of long-lived debris and avoiding the creation of harmful interference with U.S. Government satellites, particularly those which contribute to strategic stability. Furthermore, DOD spacecraft should maintain safe separation and trajectories to avoid collisions and allow other satellites to freely operate. Lastly, when collisions do appear possible, communications, notifications, and space situational awareness data should be extended to affected parties to promote the overall safety and stability of the domain.

In this article, Thornhill recommends several actions intended to reshape Space Force culture into one that reflects its unique mission, operations, and relationship with technology and industry. First, she emphasizes the recruitment and retention of an elite, STEM-focused workforce while reevaluating the approach to civilian membership. Next, USSF should further explore longer-term personnel assignments that depart from traditional PCS cycles and more closely resemble NASA project teams like for the Mars Rover or JWST. Next, the Space Force’s relatively small size can be advantageous in building an elite and exclusive reputation, mirroring DARPA or the national labs. Furthermore, steps like establishing a simple civilian “uniform” and rethinking the
centrality of warfighting education in USSF training can also contribute to a singular organizational identity. Lastly, critical is Space Force leadership consistently articulating—to politicians and the public—the unique USSF responsibilities of Space Force, both in relation to other DOD space organizations but also the wider government/industry ecosystem writ large.


The White House’s space framework outlines the significant national benefits of space activities as well as policy priorities to secure and maximize those opportunities. First, the document emphasizes space as a source of American innovation and opportunity—powering the U.S. economy and society, driving innovation, enabling resource management, and providing cultural inspiration. Moreover, space plays a role in American leadership and strength as it demonstrates competitiveness, bolsters international partnerships, and underpins key elements of U.S. national security. Reaping these space-enabled benefits requires action in support of several critical priorities: maintaining leadership in space exploration and science, advancing space-based Earth observation in combatting climate change, fostering a policy and regulatory environment that supports the commercial space sector, protecting space-related critical infrastructure and the space industrial base, and defending national security interests from growing counterspace threats.