



Panel 5: What is the Space Force's Prime Directive?

Introduced by Krystal Azelton, Director of Space Applications Programs and Summit for Space Sustainability Chair

Spotlight Talk: Sarah Mineiro, Adjunct Senior Fellow, Defense Program, Center for a New American Security (CNAS)

Moderator: Brian Weeden, SWF Director of Program Planning

Panelists:

- Colonel Casey M. Beard, Commander, Space Delta 9 (Orbital Warfare), U.S. Space Force
- Bleddyn Bowen, Lecturer, University of Leicester, UK
- Kaitlyn Johnson, Deputy Director, Aerospace Security Project, Center for Strategic and International Studies (CSIS)
- Mir Sadat, Founding Editor-in-Chief, Space Force Journal

Krystal: Welcome back, everyone. I would like to introduce Sarah Mineiro from the Center for New American Security, who will be giving our spotlight talk on the panel "What is the Space Force's Prime Directive?" Also, as a reminder, don't forget to fill out our poll for this panel. Just click the button right under your streaming feed. Thanks.

Sarah Mineiro: Hi, my name is Sarah Mineiro. A few years ago, I had the opportunity to play a bit part in the establishment of the United States Space Force and the reestablishment of the United States Space Command.

I was the staff director for the strategic forces subcommittee in the House of Representatives in both the majority and the minority. I now happily serve as the senior defense fellow with the Center for New American Security where I focus on space and strategic forces issues.

Let me say thank you to the Secure World Foundation for having me to talk a little bit about Space Force, how it happened, and where it can go in the future.

Let me first recognize that the call for an independent Space Force really started around 20 years ago with senators like Bob Smith from New Hampshire, the 31st Marine Corps Commandant General Chuck Krulak as well as at the time the Secretary of Defense Donald Rumsfeld.

It wasn't until almost 20 years of reform and reorganization had occurred that Congress started to believe that these challenges were so big that the executive branch was not capable of fixing them

all on their own, which is where Representative Mark Rogers of Alabama and Jim Cooper of Tennessee enter the scene in 2017.

The gentleman asked a pretty simple oversight question, "Who's in charge of DoD military space?" Instead of getting a simple answer, what they got back was a labyrinthine chart with over 60 different organizations, all of whom were able to say no to a specific space acquisition, but none of whom were responsible and authorized to say yes.

Over the next couple of years, with the help of individually motivated senators and the executive branch, the reasons for developing a Space Force started to really crystallize and there were four of them.

The first was really resourcing. In a resource constrained environment, who was advocating for space unique budgets? If a tough choice needed to be made between an air-breathing platform and a space system, how was that going to be made?

The second was really about requirements and acquisition. With the rise of threats to our space assets coupled with the innovation and the potential that's coming out of the commercial sector, are the processes that the DoD uses for defining requirements and for buying, purchasing, and developing satellite systems adequate to be able to address these concerns in a quick and responsive manner?

The third was really about culture, about cadre development. Who wakes up in the morning and thinks solely about space operators? How are they trained? What is their career progression? What is their opportunity for growth and how will that be fostered into the future?

Lastly, with the recognition that space was a warfighting domain, how did this fundamentally change how terrestrial operations would be executed and how future warfighting concepts would be developed?

Space Force is still less than two years old. They've made consistent progress in addressing all four of these issues. I anticipate they will continue to do so.

In general I think Space Force would be well served by going back and looking at those first four issues or challenges that were identified by Congress in the establishment of Space Force and the reestablishment of Space Command.

I think they need to build honest and transparent relationships with their oversight committees and have the courage to shape their own destiny. This is important because it's not just some science fiction trope. It's about recognizing that Space Force has the opportunity not only to make history but to shape the future.

It does this by prioritizing space resources, by choosing winners in the private sector, by making big bets on advanced technology, and by challenging legacy architectures that have been with us since the Cold War.

In this way, Space Force gets to define itself in other ways the services only wish they could. At the same time, let's recognize that Space Force will encounter challenges. Let's be honest. All of the Space Force leadership, prior to 2020, was Air Force leadership.

As an individual, it's now up to them who have raised an Air Force culture to navigate these challenging incremental steps towards independence. Let's recognize how personally and professionally challenging that will be for them.

Nonetheless, it is their responsibility not only to change how they were taught to think about space, but to make demonstrably different decisions about how they acquire and operate space systems.

I'm really loathed to talk and perpetuate "Star Trek" references when talking about Space Force, and I've been counseled plenty of times not to do it. I'm actually going to open the aperture a little bit here.

If I had to give guiding advice to the Space Force, I would probably quote Mae Jemison, one of our NASA astronauts, "Never limit yourself because of others' limited imagination; never limit others because of your limited imagination."

Thanks for having me, and I hope you have a wonderful conference.

Brian Weeden: Hello, everyone. My name is Brian Weeden, I'm the director of Program Planning for the Secure World Foundation.

As Sarah discussed in her spotlight talk, the creation of the Space Force was the continuation of a long-running debate on how the US military should approach its activities in the space domain.

Part of that debate has been, what is the role of the US military in space? Is it primarily to create capabilities that support enhanced terrestrial operations, or should there be more of a focus on in space activities and capabilities to suit missions in space?

Today, we're going to have a panel that's going to unpack that issue. Before we get started, we want to make sure we get some of your thoughts on this issue.

As Krystal mentioned, there's a poll running over Mentimeter. We're going to be wrapping up in just a minute here where you can add your opinion on this question. While you're finishing up filling out that poll, let me go in and introduce my speakers for this panel.

First, we have Colonel Casey Beard who is commander of Delta 9 of Space Operations Command at the US Space Force, which focuses on orbital warfare. Prior to that, he was deputy director of Space Strategy and Plans Record in the office of Secretary of Defense.

Dr. Bleddyn Bowen, he's a lecturer in international relations at the University of Leicester, and he's an expert on space warfare, international relations in outer space, and strategic theory.

Ms. Kaitlyn Johnson, who is the deputy director of the Aerospace Security Project at the Center for Strategic and International Studies and one of the editors of their annual Space Threat Assessment report.

Finally, we have Dr. Mir Sadat, who's the founding editor-in-chief of the "Space Force Journal" and a former director of the National Security Council, as well as a prior intelligence and space officer with the US Navy. Their full bios are on the website. I welcome all four of you to our panel today.

As Sarah mentioned, the creation of the Space Force involves multiple different problems that we're trying to be solved. How do we deal with the proper resourcing of the US military space activities?

How do we reform and update the acquisitions, process, and creating requirements for military space activities? How do we create a professional space culture in cadre and break away from that air-focused mindset that Sarah mentioned?

What we want to talk about and focus on in this panel is the things you mentioned at the end about imagination and how that affects how we think about space activities.

It really gets to this core question of, what does the future space activities look like? How should the US military be using space? Is it going to continue to have this focus on space to support to restaurant operations, or is that focus going to shift towards more of an in space?

Before we get to the discussion, can we go ahead and show the results from the audience poll? Very interesting, at least to me.

We have two-thirds of the audience who think that the focus should probably shift towards developing these new missions and capabilities towards the new space activity. That's pretty nice. I was expecting a little bit more 50/50, but that's quite interesting. Now, let's go back to the discussion.

Kaitlyn Johnson, I'd like to start with you. We heard Sarah talk about the role of the military as being a driver for the Space Force. Can you expand on this? What was that historical debate about the role of the military in space, and why was it important?

Kaitlyn Johnson: Thanks for having me, Brian and the Secure World Foundation. It's always just an incredible pleasure to talk with you guys. With this awesome panel, I'm really excited for the discussion. Sarah, as always, was brilliant and her spotlight talk, and I think really laid out the foundation for why Space Force was created and what the debate in Congress was like.

As you mentioned, it was not new. The debate of what and how the military should operate in space is also not new and has been ongoing really since the start of the Space Age and the launch of Sputnik. We're really talking about who will advocate and own space, who will determine what the missions are, and what those missions will be.

Often, this is talk about the concept of warfighting. For the layman's terms, the way think about it without military jargon is the supporting or the leading mission in space, and I don't necessarily believe that one is better than the others.

I know that my colleagues Mir and Bleddyn have written on this extensively. I'm very excited to see what their perspectives are and how they articulate those. The debate has always been...

While space provides an incredible supporting infrastructure for the US military through communications, through command and control of our nuclear forces, intelligence gathering, through SSR and remote sensing, we're seeing this debate pick up a new focus and partially, I think, driven by the Space Force and Space Command establishment.

Is this the right mission that we should be focusing on, or should we start shifting towards whatever these future missions are? We often see people talk about cislunar space as providing incredible national security advantage and how to start developing missions there.

Right now, within the department, we've have a couple of different camps, not just new versus old but also where should the Space Force and Space Command start focusing their efforts and planning for future systems, because as we know, space systems take a long time to acquire, develop, and launch, so we have to start thinking about this now.

Brian: Thank you. That's excellent point. Bleddyn, I now want to turn to you. This is not the first time this question about the purpose of military space forces has been proposed. Can you give us a quick summary from the history of how that debate has played out?

Bleddyn Bowen: Yeah, sure. Brian, thanks very much for the invitation to be here today, and congratulations on a great Summit. I agree with the introduction by Sarah Mineiro there as well and background by Kaitlyn .

The debate and the conversation within the US Air Force goes back far more than 20 years. Arguably, the idea of a Space Core or a Space Force, or anything that's more independent as a space entity within the DoD, goes back to the start of US Air Force itself and definitely by the late 1950s when military space activities and applications were certainly going to be a thing especially after 1950s or so.

Those ideas have been running around in various corridors of the DoD for a very, very long time, along with the ebb and flow. The US Air Force traditionally faced a few push and pull and tensions in this because, of course, as any bureaucratic entity, it's enjoyed the budget that came with space.

More budget means usually more influence, so they wanted to keep hold of the space budget. The Army and the Navy did try to compete to keep their various space budgets and activities in the 1950s, but eventually lost out to the intelligence agencies, NASA, and the US Air Force.

As well as keeping the budget, they had to make sure that it didn't neglect space too much, otherwise Congress would take space off of it.

If it did space too well, arguably, it would create enough of a subculture and bureaucracy within the Air Force that would then spin off into a more separate organization, which is arguably now what has happened due to political intervention from the former President Donald Trump, which jumped on the preexisting bipartisan drive that was already in the works as we already heard from Sarah.

Those general arguments of a culture really have been pretty consistent. There was some headway, of course, in the 1980s after the Goldwater-Nichols Act, which provided a bit more operational coherence within the US Air Force with regard to space, and more joint military planning and execution of operations within a strategic command and a US Space Force Command as well.

A lot of these old structures are being resuscitated and also brings things back the way ended into the George W. Bush administration as well. There's a lot of old bureaucracy and arguments that are now taking part in slightly different bureaucratic settings with the Space Force.

Brian: Thank you for that. Mir, you were serving on the National Security Council while the most recent iterations debate was unfolding. How did it play out there? What were some of the changing geopolitical dynamics and space domain dynamics that you saw playing into this?

Mir: Thank you so much, Brian, for the invitation and Secure World Foundation for hosting this event. I'm extremely humbled to be on such a great panel with everybody.

First of all, I'm speaking my personal capacity and representing myself, not the US government or any of its agencies, departments, or services, and the perspective is a national security perspective.

One of the things that I was very keen on, after the new Biden administration took off, was to see how their major policy, which I would consider as the China policy, plays out, and we see that it's very much an extension of the previous administrations' policies. Of course, there are the means of which those policies get enacted and are probably very different.

One of the themes that the last administration faced was turning the tide on China. What I mean by that was a lot of turning of the nation's eye on what China is doing. They have us in a strategic location where we can't...They've backed us into a corner. We didn't have that problem with Russia because our supply chain was independent of any Russian production or means of supply.

That is interesting, and it is interesting to see how in Congress, we see a bipartisan movement to see how we can get China to start playing along with everybody and start appreciating the rules of the road, some of the international systems, norms and values that have been guiding our system for about 80 years or so.

The primary drive for the White House has been -- and I think will be -- is to ensure that United States and our allies and partners around the world, those who believe in democratic norms and values, ethical practices in business, financial transparency, not polluting the environment, and staying within bounds, those are the ones that will live on that we will also lead at space.

The single best long-term initiative that the Biden's administration and Congress can undertake is to really address China's ever-ambitious revisionist aspirations. Really, the Biden administration has an opportunity to take something out of the Kennedy-Johnson playbook and go all in -- what Sarah mentioned earlier -- in American space development.

That is something that is very important. The one piece the last administration just couldn't get to is Artemis Program. The Artemis Program is not NASA's program. It's the program of the United States of America. It's the United States Artemis Program. That is an important piece.

If we don't understand the full spectrum of space power, then we find ourselves following the next century leaders, and Artemis is part of space power and thus the calculation of National Security involves it. Our adversaries, nations that don't consider us as friends, have integrated their national security commercial and civil seamlessly.

The question is do we want to lead in space or not, or do we want other nations to lead and we follow them, and that's fine, if we want to do that. That is some of the discussions that we had in the White House without getting into specifics of it. That was what the themes were.

I'm assuming that these will be the themes as we see in the media and in some other statements being played out right now in the inter-agency meetings, and of course, every agency has their particular perspective. That is going to be negotiated.

Brian: Thank you. Colonel Beard, I'll turn to you now. You were also on the ground floor of some of the discussions both within the Air Force and your time in the Office of the Secretary of Defense.

Can you add in what you were seeing both from an operational perspective, and maybe also on some of these policy iterations about the changing nature of the space domain in the last few years?

Col. Casey M. Beard: Sure. Thanks, Brian. Again, like my colleagues have mentioned, thank you to Secure World Foundation for the invite to participate on this stellar and esteemed panel to discuss a very important and timely topic. I very much appreciate that, as the rest have mentioned, and also, I appreciate Sarah's comments at the opening, and those that have been mentioned to this point.

What I would add, maybe another perspective to all the spot-on statements that have already been made, from an operational perspective, is the threat environment itself.

The way I would look at this, the two bins that I would categorize the evolution and the development of the Space Force in are the combination of the United States and our allies and partners' increased reliance on space for national prosperity and for security coupled with an increased growth or a trend in a threat environment that could potentially deny that access.

If we go back to a shorter period of history, and there's always a danger, if you will, of trying to oversimplify historical correlations to what you see now, but there's an important time period that it's important to understand here.

If we go back 30 years to 1991, two seminal events occurred in the same year. The first was Desert Storm in Iraq, and the second was the collapse of the Soviet Union, and ultimately, the end of the Cold War.

Those two events really did contribute to the next 30 years, the culture that had been developed, the perspectives, the paradigm, if you will, of how space contributes to national security, and what the military's role is in that.

I would say with the first example, Desert Storm -- as some had been quoted in the past as saying the first space war -- introduced space capabilities into the theater fight, position navigation and timing, military satellite communications, missile warning.

The asymmetric advantage that we gained, we witnessed, and realized in Desert Storm was largely attributed to those space-based capabilities. That set us on a course to exponentially grow those capabilities.

That demand signal in the Department of Defense in particular was exceeding what we could even develop, acquire, and field. That was the world that we grew up in over the last 30 years. We're at a point now where we do not project or employ our instruments of national power without space.

On the flip side, the second example, with the fall of the Soviet Union, collapse of the Soviet Union and the end of the Cold War, we effectively lost a peer competitor that could challenge us and prevent access to the domain.

While maybe smaller threats in terms of jamming and other capabilities or operations may have persisted over the past 30 years, at the end of the day, our peer competitor had been lost.

With that effectively met is that we could acquire, develop, field more highly technical, highly capable systems to support theater operations, and didn't have to necessarily prioritize the in-domain requirement or capabilities to protect those systems because that wasn't there, wasn't as credible, or as persistent or prevailing.

What we've seen over the last decade plus, for example, China's direct ascent launch in 2007, that's well-documented and recorded, and a series of other activities, the threat environment now has begun to increase and mature and become more complex.

Ultimately, it's that addition to the operational environment -- and again an addition to the four imperatives that Sarah had mentioned -- that really give rise to the need to have a separate service.

That is exclusively designed to develop the doctrine, the capabilities, the professionals that are steeped in understanding the domain and are able to be able to leverage the domain's capabilities and characteristics for, again, national security and prosperity. The threat environment is a central reason for that.

Brian: Thank you for that. It's a great recap of that more near history and what the military saw, and how we've been changing around some of those capabilities.

Mir, I want to go back to you and now get to the crux of the question or trying to get through this panel. You've been pretty outspoken in recent writings and some of the discussions that the Space Force should move beyond just this support orientation of supporting terrestrial operations, and you were hinting that in originalist remarks.

Can you summarize that argument in, I'll say, two minutes or so? Why do you think the Space Force needs to look beyond just the traditional supporting role?

Mir Sadat: Two minutes, OK. It took COL Beard, nine months to write the [Capstone document](#) and it's not two pages. [laughs]

Yesterday, if you didn't read, Space Force Captain Chris Fabian wrote an [excellent piece](#) in The Hill, so I would recommend for you to read that and look at all the links.

China has proclaimed themselves that they want to become humanity's dominant space power by 2045. China is not containing themselves to LEO, and they're looking beyond. That is something that should concern us.

That should also be something that should have a chilling effect on how we are calculating because we see on Earth, around the planet, how they behave the extermination of Uyghurs Muslims, the Hong Kong protests, the harassment of China, the COVID pandemic cover up, and so forth.

Then also in space, we saw that things have changed, and I've seen their behavior change for the better. We saw their reckless 2007 ASAT test. We have debris still orbiting until 2027 or so.

While they're still interested in LEO, they are now looking beyond LEO, and they're integrating commercial and civil technologies into their national security enterprise. They have set their targets on GEO and xGEO. As I was mentioned, xGEO has been coined as a cislunar area of operation. That's an important piece to think about.

We hear blue water or brown water, but I like this terminology that Coast Guard Captain Mike Sinclair coined earlier on last year called look-down space infrastructure, which provides us everything PNT geospatial imagery, communications, and also other non-security related things like weather, aviation control, maritime traffic, even wildlife trafficking control, and then climate and Earth science research.

Today, the DoD is very focused, and as it should, on look-down operations and defense of our United States space assets to facilitate those operations. We cannot stop doing that. We should not stop doing that. The idea is starting to become more inclusive, and we see some involvements in that.

Yesterday or today, AFRL released a primer on the cislunar. We need to start looking at that. We need to start planning for that. We're not there right now. I know the argument is always, "Hey, we're not there right now," but guess what? The Chinese are planning, and they're building, and they will be there. Then we're going to be looking like fools without proper planning.

We will have to have the capabilities to protect our look-down infrastructure, but at the same time, we need to start looking at what is needed for look-up national security space operations. We need to start looking at what acquisition...

Authorities need to be made more flexible. We need to have a gap analysis. We need to start thinking up corresponding closing of operational authorities to address that, so we can have that full spectrum capability.

Also, most importantly, as a national security person, I'm concerned because I don't want the Chinese government having unilateral dominion and control and holding my critical capabilities at risk, whether it's to look-down capabilities or to look-out and up capabilities. That's the important piece I think we need to be looking at.

One of the things that we like to think about -- I'll compare this to...We talk from history -- is how our highways were built. In the same way, President Eisenhower had the foresight to look out the development of our interstate highway. Even before they were enough cars and trucks to utilize them, we must invest in the same way to secure a space infrastructure today, because we know it will be there.

Everybody's looking at the economic projections. That is what China's doing, and that is what we really haven't started yet. We need to start thinking about it. For example, space systems need to be part of the 17 critical infrastructures that DHS lists.

I would end with this that if Eisenhower would be alive today -- and I wish he were -- he would probably support developing the space highway system of tomorrow, just as the interstate highway knitted us together and introduced our country to each other.

We can introduce humanity to each other, but it really needs to be who will build that infrastructure and who will be in control of that infrastructure. If we are not, then we relegate that to China, and that is where we're at right now.

Brian: Thank you for that. Bleddyn, I'll turn to you now. You've recently written a book on space strategy that argued essentially the other side of this issue that space is likely to remain largely a support function. Can you summarize that argument in a couple of minutes?

Bleddyn: Yeah. [laughs] I'm condensing eight years with the work into two minutes.

: The analogy I pushed in my book is that we have to see a little bit more of a coastline and concepts of bluewater seapower that a lot of people like to use about military space thinking and strategy. That fits more with what may or may not when they happen with interplanetary space.

When we talk about anti-satellites in Earth orbit, the coastal mindset is the best thing because it is about infrastructure and support of the means of military, civilian, economic, commercial, security intelligence, the lot.

Even in Earth orbit, though, I would disagree with that interpretation or rather the implication with the poll at the start of this panel, that it's either/or. It's not support versus combat.

As we know in Earth orbit, combat and support operations have a long history in space, in Earth orbit, so even in environments in coastal operations, it doesn't exclude offensive or warfare operations and not just logistics. Both will happen. The way we approach space power is about the influence of that environment, on the terrestrial environments -- land, sea and air.

If you can't use that infrastructure or if the use or non-use of orbital infrastructure of space makes no difference on Earth, and there's no point to waging space warfare in the first place.

The same with the Navy, the same with the air, there's no point just doing stuff in their own environments for their own reasons, if it has absolutely no impact on what goes on the ground. Conceptually, that's the starting point. It's about the use of the influence you gain from that medium.

Battle is a means, not an end. Continually seeking battle is not necessarily the right mindset. When thinking about space culture and new space services or more, units within military forces around the world are now doing space. For me, it's the logistics mindset is where you start and then combat operations and thinking has to then support those logistics operations.

That's the way around I would argue with. It's not a one or the other approach, but I would keep it to Earth orbit and leave cislunar to the fantasists.

Brian: Thank you for that. We're going to turn to audience questions here in a minute. I see there's already several that have been piling up in there.

One of the ones that you just mentioned that one of the audience questions we've gotten in here is exactly that. We created a bit of a manufactured choice here between one or the other when it really is we have to do both.

Colonel Beard, I'll turn to you now because you were part of the team that wrote the Space Capstone Publication for the Space Force. How did you guys approach this issue? Is this where you felt that Space Force had to deal with both?

Col. Beard: That's a great question. I would continue on with the last comment that was made. That at no point in time, part of the team that had drafted this in advance of this service becoming a reality did we parse it out in that stark of a manner.

What we did realize and what we wanted to emphasize in writing this first Capstone publication were three things, three motivations behind it. Those all tie into answering the question here.

The first was that space power had matured to the point that it warranted its own independent articulation. That was the first prevailing motivation that drove us to this.

The second motivation was that when we were to have a new service, should we have a new service, that that service would need a central document that provided its purpose, its identity, and its culture separate from but coordinated with and integrated with the other services. Those that join the Space Force would no longer be marines, airmen, soldiers, sailors, etc.

The third motivation, which was equally related I should say, was that the joint force would also have to understand what the Space Force brings and what space power brings to the joint flight to national security.

It's in that framework that this discussion really started to abound. We identified in addition to those three cornerstone responsibilities of the service. The first is to preserve freedom of action in the domain.

The second is to enhance joint legality. You could suggest that that's what the space capabilities in military space has been doing for decades. The third cornerstone responsibility was to provide independent options.

If you look at that context to this blue versus brown, looking down versus up discussion, it really is a combination of both. We have to first and foremost preserve freedom of action to those capabilities that enable us and provide the prosperity and security that we have.

That is an inherently brown water, if you will, dialogue that we have to maintain access to those capabilities which already exist and which might be threatened and potentially could be removed in a detrimental fashion.

At the same time, though, we do put hooks in the Capstone publication, in the doctrine, that speaks to cislunar, xGEO with the anticipation that national interests, national objectives would expand beyond geocentric orbit and that the concept of preserving freedom of action, providing independent options, they are not contained to a specific geocentric location, if you will, or orbit regime.

Those requirements, that cornerstone responsibility would expand as national interests expand and that the military would have a role pervasively to be able to provide those no matter where we are.

I would also say regardless of where and when that happens, the fundamental premise of defense and space power and combat power in the domain has to also and always remain in our geocentric regime, which is providing support to terrestrial operations.

Again, we're not limited to that. Should we expand, the military - and the Space Force in particular - must be on guard and on call to be able to provide that and continue that support freedom of action beyond.

Brian: Great, thank you for that. Kaitlyn, I want to turn to you and get your thoughts on this. In particular, to me, one of the issues with doing both is that creates some resource challenges, particularly on the budget side. How do you see this, and what do you think some of the challenges are in working through this?

Kaitlyn: That is exactly what I was going to say. It's not a one or the other approach. However, in the current state of our resource constrained environment and in the future looking at a further resource constrained environment, we're going to have to make tough decisions.

Not to eliminate the great capability that we already have, but decisions on what to further invest in. As Sarah said at the beginning, the Space Force has incredible opportunity and responsibility in promoting commercial space starting and investing in new technologies and new missions. That's where this resource issue plays in.

I think there are pros and cons to this debate on all sides. What I'm really excited about is that having this debate in open forums like this is causing further research, deeper discussion, and even more study.

Giving attention onto the issue and smart minds thinking about it will help us make more informed and technically informed policies. Not just what we can dream of and throwing in "Star Wars" and Space Trek references, but really what are we physically capable of, and where is the conversation leading us?

While keeping in mind that we can't just posture ourselves what we think our adversaries are doing, we must do what will protect and support our troops, our capabilities, and our national security at home.

Brian: Thank you. Mir, I want to pull up one of the audience questions here and get your reaction to it. It's something that I wonder myself. You mentioned that China has talked about dominating space and becoming the global space power by 2050.

But the US has also talked about that, dating back for a few decades now, and has had US policies or doctrine statements from the US military talking about space superiority.

How much do you think that China is thinking on this was influenced by prior US thinking? Are they both approaching the same way, or is China really thinking about it differently than the way the US has in the past?

Mir: Brian, that's a great point. Let me just also reiterate I'm in violent agreement with Casey Beard, so I think the document had a great, like he said, stepping stone for expansion into the bluewater space aspects. Once we get there we'll be able to expand. I think that was an important aspect that I was very happy to see in the Capstone.

When we talk about domination, nobody can dominate space. I had a conversation a couple of days ago with someone about Lagrange points. They're as big as the Mediterranean Ocean. How are you going to dominate the entire Mediterranean Ocean? Even physically on Earth, it's not that easy to do.

We're not talking about dominating space. What we're talking about is different things, and like you said, China's really smart move of the BeiDou System. The alternative to GPS, who are bringing on board for that, it's very shrewd. It's very smart. It's something straight out of our playbook.

They are making sure that there's no dependency on the US. They're making sure that the little coalition or the big coalition that they're building there's no dependency on the US, and that then, if they wanted to, they could tap in and get national security or intelligence information from that system.

The Belts and Roads process, it's something very similar to the Marshall Plan, but different. They are doing that, and they should be doing that. If I was in China, and I was advising the Chinese leadership, I was Chinese, I would tell them, "Do that. What are we doing?"

What I'm saying is that the commercial industry is being dominated by China. The aggressive manner in which they are making sure our companies are being driven out of business, where they factor and they spend, and they send our production lines overseas, similar to what happened with solar panels.

The US creates another mass producer of solar panels who are dependent on them. These are ways where they dominate, so they dominate at that aspect. The US really doesn't have a problem. The US military doesn't have a problem of dominance. The Navy's goal is to always be dominant, and the Navy is going to be much more robust about it than the Air Force. Air Force talks about air superiority.

I'm pushing for, "Hey, we need space supremacy." There's a big difference between dominance and supremacy and superiority. Superiority, "Hey, any day one group can win." Supremacy, "At a specific location, at a specific time, you will win."

When we dominate, the Navy dominates, they will dominate at any time, any location, anywhere on Earth, they will dominate. That's their goal. Whether they do or not is a different discussion. When we talk about the US being a dominant military force in Space, that is what I mean.

The Chinese are looking at it. They're going to be dominated from the civil side. They're going to create a very unique ecosystem where everybody wants to be part of that system. They're going to upgrade their military capabilities so that they can do things that we can't legally yet do because there's restrictions.

The Space Force just signed an MoU with NASA. That's the first time. This is a great start. There are certain things our government cannot do where we're bound. Then, of course, it's the overall

the national idea of what's going on. What do Chinese people as a whole want and what do we want as a whole?

That is the importance when we talk about dominance. I think the Chinese are working towards that. We just need to wake up and see whether that is what we want to do.

Brian: Thank you for that. I'll return to you, Kaitlyn, and then Bleddyn to see what your thoughts were on that this same question of how to view the issue of dominance.

Kaitlyn: Brian, as you mentioned earlier, our organization, CSIS, writes an assessment every year in tandem with Secure World's Global Counterspace assessment. In this research, we look at the language directly coming out of China, Russia, Iran, North Korea, India, and the United States.

Between that research and continuum research, the language is not much different from the US and China. You can talk about intentions. Obviously, Chinese public-released information is much more controlled than here in the United States.

Someone could be watching this right now and hear what Colonel Beard is saying, what we're all saying, and take that as US policy or US movement and policy, but also we need to think about what the impact of the United States roles, responsibilities, and communications are on our allies as well as our adversaries.

After the US stood up the Space Force and the Space Command, we saw a ripple effect across our allies. The UK has stood up their own space military forces, so has France. There are significant investments in space and space organizations across Europe but also from NATO.

We need to be careful about how we communicate and posture ourselves, not just looking at what China and Russia are doing, saying, and thinking but also what our allies are investing in and what kind of direction are they taking from us.

Brian: Bleddyn?

Bleddyn: When it comes to the question of doctrine and language, to Americans, I would say whether there's no better or flattery within an invitation, the Chinese are learning from the the United States.

There's been studies showing the remarkable similarities in the learning that a lot of People's Liberation Army have gone through in thinking about military space operations. The language is in many ways deliberately similar and also because they're learning from similar strategic concepts from military theory.

In terms of thinking more broadly about what China's doing in space, I think there needs to be a bit more caution. I'd put a bit of brakes on some of the more space-racing arguments that we've heard.

It's worth bearing in mind that China has spent the last 30 years investing so much money in its massive array of military and civilian space infrastructure to try and get to almost where the United States was in the mid-1990s. That's which China is now today in the bulk of its space infrastructure.

Now, there are certain targeted areas like space weapons where of course the Chinese do have a lot more capabilities than the United States did in the 1990s, but China has been in catch up mode.

Also, if you look at a lot of documentation from China on its exploration plans on the Moon and perhaps deep space probes, the deadlines are always optimistic. The same as they are in the United States, Europe, and Russia. Everybody likes having those diagrams on the data never met.

In the year 2000, China was saying that it was going to have boots on the Moon in 2020. It's 2021, and they're just putting up their long-term space station into orbit. We have to be a bit more careful in terms of thinking or China's going to take over systems tomorrow.

We have to stop seeing more scientific and exploration activities as inherently dangerous and a threat, as well, because that's not how the United States would like to see its Artemis Program seen as.

Even though they may well be some military involvement, the Space Force is talking about cislunar operations, that language that China would jump on in the same way that a lot of American analysts jump on any PLA involvement in any space activity with the Chinese that are not necessarily threats like the space station, for example.

There's a lot of mirror-imaging and there's a lot of similar action or reaction going on on both sides here, but also it's worth remembering that the cislunar environment really is not politically, so it is not militarily or economically significant today and probably will not be for a very long time, especially when getting orbital infrastructures to work for real, important issues.

Real, important implementation on Earth is still something that's quite difficult to do and quite temperamental, just see how GPS III rollout is coming along.

Brian: [laughs] Oh, it's been quite an interesting discussion. Colonel Beard, I'm not going to ask you to comment on GPS III specifically. I do want to pull up another question from the audience here and touch on something we mentioned a few minutes ago, and that's the role of commercial in this.

The question is, what is the US Space Force's role in terms of fostering commercial and space activities? How is it you guys are seeing that? Is it part of this equation of increasing American space power that we talked about earlier?

Col. Beard: Another great question. I would say, broadly and many of you probably have heard General Raymond say very similar comments that the Space Force from the get-go is built to be

innovative, agile, fast, and future-looking in. We are really looking at everything that we can with an open canvas.

I would say that as the Space Force continues to mature in our presence continues to expand and adjust to meet the needs of the nation in the sport of our allies and really to contribute to a safe, secure, accessible space domain, we're also partnering very closely with the commercial sector.

I believe that there's a symbiotic relationship between both that we can continue to seek some of the great technology learning innovation that's being done in the commercial sector, which were, in fact, it might be even exceeding the DoD.

We've seen an inflection point over the last couple of decades where the DoD has largely been the leader of technology and fielding of that technology. In this case now, the commercial sector really has the preponderance of that.

We have already established several connections and bonds with our commercial partners to understand and leverage some of the approaches they take and the digital transformation that you've probably heard several times that the Space Force is trying to undertake to get us more into the 21st century and beyond.

From that to infrastructure to just other technologies that could be fielded to continue to provide robust capabilities for what we need here on Earth and beyond. I think the growth is absolutely there. In fact, I know it is.

There's evidence throughout just the first year and a half of our existence, and I absolutely see a continued growth in that relationship, a more formalized growth, going forward.

If I could before I step off, I'd also like to add more to what Kaitlyn had mentioned previously about also the need to partner with our allies. This is not go it alone.

The objective of being able to maintain the security accessibility requires a team approach, whether it's commercial, allies, partners, etc. That is absolutely what the Space Force is focused on, and we're already seeing the benefits of that at this point.

Brian: Great, thank you for that. Mir, do you want to chime in on this question as well?

Mir: Yeah. I think this is one of the important pieces. One of the reasons for the creation of the Space Force was to help with the whole procurement acquisition process. The fact that the Space Force is doing that is an important aspect too. Don't forget that while the major primes have always been the backbone of a lot of the heavy lift, the innovation really lies in the smaller companies.

We need to find ways. In the COVID year, as a government guy -- I can't take money for this -- I was giving free advice for a lot of startups. I would tell you how much time I would spend with people from CEO down to their finest. People saying we are baffled by how this process works.

It's not just space acquisition and processes but others. We need to find a way to streamline that because there are some amazing capabilities out there that are not integrated.

Two, the other part that's not really looked upon that much is, how we are leveraging commercial when it's an idea that's not currently in the architecture? It is currently not something that we have imagined. Getting that in there so that becomes a requirement for future planning, that's an important aspect.

I've talked to companies where I'm like, have you talked to General Raymond? They're like, no. There's a reason why they're not talking to General Raymond, but the idea that this needs to somehow be incorporated into the imagination of the service so that then they can say, "We are looking for stuff like this. Can you approach us if you have this?" That's an important piece.

Lastly, I want to clarify. Maybe I misspoke. When I talk about space power I'm not talking about militarization. I'm talking about the national instruments of power and how we project that power into space.

Just like the Food and Drug Administration as part of our national security as we witnessed in this COVID year, the same thing is happening with NASA and space. They are part of the national security calculus and space power.

The DoD really must return to some of their historical roots in going back into commercial, going back to supporting civil like we did in the '50s and '60s. The president mentioned that he wants to create DARPA-like agency for science during the State of the Union.

These are things that we need to start feeling comfortable with. I know it's maybe uncomfortable for some people. We need to start feeling comfortable with it. Thank you.

Brian: That's an excellent point. That's a difficult thing to try and balance. How do we integrate all that stuff without the military aspect taking over all of those other things? NASA now being perceived as potentially being a military entity or having a role with that, I think that's an interesting question.

There's another question I want to bring up quickly as we're moving into the last few minutes here. Bleddyn, I was thinking maybe you could give a quick answer to this. The question is, "How can the US use words like space supremacy/dominance while at the same time talk about normal behavior which has been a big talking point for the US military the last several years?"

Bleddyn: Thanks. In terms of squaring the circle, I draw a distinction between words like dominance and supremacy. They really are more about military doctrine and strategy and what you want to achieve in a time of open hostilities and conflict versus international cooperation and norms and rules of the world.

It's something that you want to do in the absence of open hostilities. Therefore, when the United States Space Force we'll talk about denying the use of space to adversaries, it doesn't mean denying the use of the environment in a time other than war.

In the same way the US Navy talks about dominating particular sea lines of communications, in particular oceans, in the event of open conflict, but during peacetime, it ensures safe passage of all legal traffic.

That's the distinction I make. I don't see a contradiction there because rules of the road are really more about everyday governance in times other than open warfare. That's how I would square that circle in the language that we see coming out of these different parts of not just the US government but many of the United States allies and also some other states as well today.

Brian: Great, thank you. It's a great point. As we wrap up here I want to give one last question I'd each of you to chime in on. As the Space Force and the US government in general continues to ponder this question of, "what is military space look like going forward?"

Give the opportunity to pick up maybe one challenge you think we should think about as we go through that, whether it's resources, it's the policy, is it legal implication, whatever else. Maybe a minute or so each as we go one final round to wrap up that. Mir, do you want to start? Then we'll go around.

Mir: I think the issue that I'd like to stress is what we don't have and what we need, and we are constrained by the way our government works. The election cycles, the fiscal cycles, and all that. We really need a national space vision. Bruce Cahan wrote about it a while back in a report for DIU and AFRL and Space Force, but I think we need to have that.

The second piece I would really talk about is we need to talk about how, why, and when we should classify space systems as critical infrastructure. The debate is rife right now. There's legislation pending in Congress about that.

We need to start thinking about that because that will drive how we protect our look-down space systems but also start planning our reliance and our future capabilities of the look-out piece of space infrastructure and systems.

I think that is the major piece I would want everybody to leave with. We should, and we can, do both. We can look down and look up and about. That is something that I want to leave everybody with.

Brian: Thank you. Kaitlyn?

Kaitlyn: Thanks, Brian. You mentioned a lot of challenges. We talked about the resource one earlier.

I want to pick something different, and that is the challenge of integrating commercial capabilities that already exist into our services architecture and using them actively in missions while balancing the security aspect of using commercial services and software. As we know, US military satellites are highly protected from attack but commercial services might not be in the same way.

How do you impact these requirements without stifling innovation or putting too much burden on commercial industry? If commercial industry wants to make that impact and have the government as a reliable customer, they do also need to think about adopting a lot of the best defenses or protections in the case of a conflict, an attack, or operating in a denied environment.

Brian: Of course, in doing so, what does that do for their costs and their business model? That in itself is a hugely complicated subject. Bleddyn, I want to turn to you.

Bleddyn: Thanks. I think the most interesting thing I'll be watching in the years ahead with military space in the US is the evolution of the culture in the US Space Force. I'd say at the very start, the Space Force is inheriting a lot from the US Air Force both in terms of actual personnel but in terms of procedures and institutions, and what it's done as a US Air Force part for the past 60 years or so.

Also, in space, what is interesting to see, what could develop is will there be a greater emphasis on prestige roles given towards what is effectively a logistics job? Logistics and IT support to keeping US terrestrial forces active and efficient and working whether or not the space environment itself is degraded or not.

In space, as we know it today, we don't really need the "Top Gun" flyby jocks. We don't need the big gunners. We don't need the flashy naval captains. You need the engineers. You need the logisticians. You need the computer geeks.

Will they see a proper home in the culture, in the US Space Force? I'll be keeping a close eye on [indecipherable 216:08] years to come.

Brian: To that point, there was a recent statement about the Space Force as the digital service and sort of trying to attract some of those exact skillsets. Colonel Beard, over to you for the final word.

Col. Beard: Brian, thanks. Great points. All legitimate challenges that we were facing in here. I don't have necessarily anything new, but I want to maybe add a small tweak to those. First, I'll start off on the question that had been asked at the very end.

Bleddyn, I completely agree with his comment that the concept of norms of behavior and the need to attain space superiority or supremacy are not contradictory to one another. In fact, in many ways are complimentary.

One important benefit is being able to establish norms. How we get there is really the challenge, but the benefit of those is that you can identify, and all can identify, an agreed upon set of bad behaviors or unwanted behaviors that could trigger a further deterrence or, if necessary, defeat mechanisms.

In the absence of that, that creates the challenge. What are the ROEs? Who is in the right and who is in the wrong? That, if you will, you want to put in those terms. The ability to obtain

norms of behavior in this domain is going to be a challenge, but one that we absolutely have to pursue if we're to be perfective in defense of it and prosperity of it.

The other piece is on the resourcing of it. It really is in the context of the DoD writ large. Now that we have a new service a year and a half into existence, what is the prioritization scheme? How does the Space Force itself fit into the rest of the joint force? There will be tradeoffs in strength, budget lines, etc. All of those challenges that we know.

How does the joint force, and how does the Space Force, integrate into the rest of the services in armed forces from a prioritization standpoint to be able to get the resources it needs, and understand that those tradeoffs might have to be made with the more established services who've been doing this for a while.

Lastly, I just do want to reiterate the point that that Mir had mentioned about classification. Highly classified business, highly classified world. We're not able to talk a lot about it, and I know that always creates intrigue and mystery behind it.

Collectively, going forward, we need to have the right balance of what we can talk about, what we need to talk about to continue to advocate to solve these challenges and, of course, maintain the security that we might need to, like we do in any other domain.

I would say those are the three. Most of those have already been mentioned. I agree wholeheartedly with those. Thanks.

Brian: Thank you as well. Thank you to all of you for a great discussion. Wish we had an audience here in person to give you the round of applause you all deserve. With that, we'll wrap this up. I'll turn it back over to Krystal to introduce our second keynote speaker.