SPACE FORCE ASSOCIATION

MAGAZINE

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LETTER FROM THE EDITOR

Workforce development for the space industry and the U.S. Space Force will make the difference between operational success and operational failure, between U.S. space superiority and U.S. space inferiority, and between winning in strategic competition and losing to our adversaries. The Space Force Association and its partners in industry and academia have worked tirelessly to create innovative education programs that meet the needs of the new force at the speed of instant transformation.

STEM programs have led the charge in the space industry for some time, but there is a new dawn on the horizon for humanity's future. To build an effective, intelligence-led, digital and space-based force, there needs to be a shift in perspective that incorporates the creative aspect of the mind and human psyche. From interpersonal relationships to imagineering in game theory to providing intuitive, actionable intelligence to the Joint Force, the space industry and the Space Force will benefit greatly from infusing the A (arts) into their preferred education and training programs, creating a STEAM focused curriculum for new aspirants.

This issue of SFA Magazine explores the myriad perspectives on space education, hard skills v. soft skills, the synthesis of said skills to develop top-tier warfighters, and dives into real-world applications through Future Fiction written by Guardians and live opportunities in USSF workforce development.

As always, take some time out to sit back, relax, and become informed, intrigued, and inspired!

With gratitude,

Felicia S. C. Gooden
SFA Magazine Editor

EDUCATION COLUMN

CREATING SPACE PROFESSIONALS AND GUARDIANS

Michael "Ludes" Martindale
Space Education Director

SFA's education programs are based on strategic partnerships with industry and academia to carefully cultivate a well-educated and trained workforce that is battle-tested and qualified to meet the needs of space innovation and the U.S. Space Force. There is a unique opportunity for industry to leverage non-profit, private sector partnerships to take the lead in establishing educational standards and programs that not only innovate the industry but also set a new standard for innovating education.

The Space Force Association is committed to workforce development for the space industry and the U.S. Space Force. Our programs aim to inspire and educate young talent to pursue careers in the space industry and as Guardians. We also provide opportunities for Guardians and current space professionals to elevate their standing through research and professional certification programs. SFA's Education Committee actively partners with industry and academia to keep pace with the ever-evolving space domain, the threats therein, and the potential thereof – to secure the space domain and cultivate humanity as a spacefaring species.

Inspire and Educate.

The SFA partnered with S.T.A.R.S. VR and the University of San Diego to create the Space Horizons Academy, which is now in development. The Academy will offer a 6-12th grade and undergraduate space workforce pipeline to cultivate the next generation of skilled workforce leaders and to foster understanding of the Space Force. Through the scalable and accessible space-focused Sci-

ence, Technology, Engineering & Math (STEM) curricula, learners will be able to acquire the knowledge, skills, and abilities necessary to enter and lead the industry. The Academy links existing STEM curricula to Global Space University's Certified Space Professional courses through space-focused content. In this way, SFA and its partners offer a workforce development program like no other, designed to inspire and prepare youth to pursue rigorous STEM degrees necessary for a vibrant space economy.

The Space Professionals Society is a student-led university organization focused on experiential space education that is also coming on the horizon. The Society builds on the pillars of awareness, feasibility, and connection. It will build awareness of the space industry and the Space Force for all students interested in joining the Society. Activities will be created to meet its members where they are in life, and regardless of their background, Society members will be able to access resources and participate in activities individually on their own schedule, or as space tribes engaged in experiential activities that inspire further investigation into the space industry. Finally, the Society is designed to foster connection. Whether they are future scientists, engineers, artists, or journalists, Society members will be able to connect with peers locally, nationally, or internationally, and with established professionals across the industry.

The Future Space Professionals Scholarship encourages STEM students with diverse backgrounds, skills, and experiences to continue their education as a foundation for future service as a space professional or Guardian. The scholarship targets undergraduate STEM students in their junior or senior year to ease individual financial pressures and contribute to the development of the vibrant technical workforce the space industry needs to thrive.

Research and Certify.

SFA is developing the Space Research Grant program to support the scholarly activities of graduate students and faculty advisors. Regardless of field of study, graduate students researching topics relevant to the space domain,

space industry, and Space Force will be eligible to apply for funding.

Leveraging the ideas of two young Space Force officers, SFA is initiating a Guardian Research Intern program to connect young Guardians with research institutions. The program will pair bright young Guardians with top researchers in federally funded research and development centers, think tanks, and universities to pursue research topics relevant to the Space Force and its mission areas.

The SFA partners with Integrity ISR and Global Space University (GSU) to provide the Certified Space Professional (CSP) series of courses designed to raise and normalize standards for space professionals through validation of the individual's knowledge, skills, and experience as a space practitioner. CSP graduates assure the industry, both employers and clients, that they bring professional credibility to their roles. Employers can be confident that CSP graduates thrived in a comprehensive, competency-based, rigorously assessed, education program that is aligned with industry and workplace standards. CSP graduates are ready to make significant contributions to the rapidly growing, exciting, and diverse challenges faced by the Space Force and the space industry. As of December 2023, GSU has issued over 300 CSP graduation certificates to space professionals across the industry. As a bonus to excellent education, SFA and GSU partnered with the University of San Diego to provide continuing education credits to GSU graduates for their completed CSP courses.

Final Thoughts.

Industry has an opportunity to contribute to and empower the future space workforce through SFA's programs. By partnering with SFA, industry can play a role in creating its future, working with SFA to inspire and educate future space professionals and Guardians, supporting critical research, and leveraging the advantages of a certified team. The space industry is growing rapidly and outpacing the ability of the current education system to produce qualified talent to meet the needs of space innovation. Industry can be the difference, for itself, the Space Force, and the Nation by

partnering with the Space Force Association to create a self-regulated and self-directed workforce that consistently delivers operational excellence.

THE ART OF INTEGRATION

TSgt Joseph R. Allen
5 EWS/MAO, Flight Chief, Integration

To drive success in the USSF, Guardians, industry, and academia must leverage the art of human influence in tandem with technological capabilities to enrich a space warfighting culture that drives organizational and operational excellence.

The modern military force is more technologically capable than ever before. While essential to operating in today's warfighting environment, this skill-based foundation is not the only requirement for peak performance. The soft arts of human perspective and influence are necessary to develop an efficient and adaptable force. Just as there's a leadership art, there's a culture art. The movement of the Space Force to establish a conscious, space warfighting culture is imperative during this time of competition in the space domain.

Guardians must note their contributions outside their career expertise and develop their soft skills – including interpersonal communication, program management, critical thinking, and variable design skills. Human influence on space warfighting development and program management is highly navigable when considering the benefits of cross-collaboration among stakeholders. Feedback from servicemembers and industry dramatically benefits the Space Force's ability to rapidly develop relevant capabilities to meet operational needs, even though our work is highly classified.

To integrate with industry and interservice organizations, we must

align our priorities with our vision of space superiority, approaching complex issues with a unity of effort and diversity of thought. For example, a weapon system produced using an agile software development method incorporates early input from space operators regarding capability delivery effectiveness or ineffectiveness, allowing developers and program managers insight and perspective. This enables prioritization of capability development from an operational standpoint and allows greater suitability of the delivered product. Not only does this benefit the warfighter, but it also gives program managers, test directors, industry, and stakeholders the ability to express their requirements and timelines to the operational community and ensure all program elements are being addressed.

To truly achieve an integrated force, there must be a sense of ownership over the capabilities each stakeholder, organization, and member contributes to. Advocating for needs in working groups, attending forums to discuss complicated problem sets, and reading source material outside of our areas of expertise to gain perspective sets a precedent of being present and engaged and builds trust. We can see the benefits at a high level when examining the restructuring of the Space and Missile Systems Center, the stand-up of Space Systems Command, and the creation of the Assistant Secretary for Space Acquisitions and Integration position. These developments fundamentally changed how the Space Force acquires its capabilities in the following ways:

- Strengthening relationships with academia to help generate resolutions for tough technical problem sets.

- Opening avenues for collaboration between the Space Warfighting Analysis Center and industry partners to create new lines for innovation.

- Building collaborative councils to seat military and industry decision-makers at the same roundtable, who can deconflict priorities, streamline requirements, and mitigate funding drains through cost-effective strategy.

If, at the highest echelon of Space warfighting, we can see the practical application of these nuanced

GUARDIAN THOUGHT LEADERSHIP

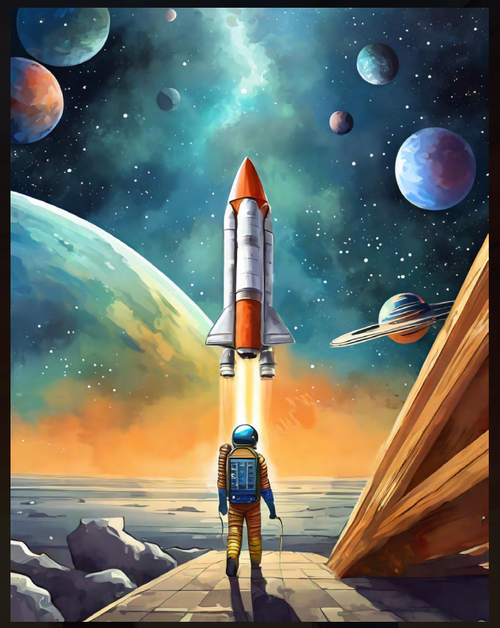
"soft skills" at work, then we find ourselves with a series of questions to answer: How can our NCOs and enlisted members take the art of integration and collaboration and put it into practical use every day? What resources are available, and where do we start?

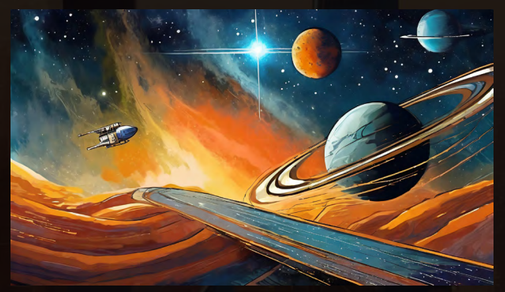
First, participate in professional organizations by attending seminars and industry days and having conversations across organizations as often as possible. Be present, engage, advocate, and take ownership of what you bring to the table to develop the foundation for the Space Force.

Next, Space Systems Command offers the Scaled Agile Framework (SAFe) for government courses to all Guardians, teaching Lean-Agile principles that assist with improving solution outcomes. The DoD has incredible training resources to help facilitate growth throughout multiple disciplines. Take advantage of these resources and sign up for relevant courses.

Lastly, read as much as possible. Leadership at all echelons provides recommended reading lists to help provide perspective, new guidance, and updated policies.

Staying informed and actively applying the nexus between human influence and technological prowess will help foster the conversations necessary to build rapport, support networking with mission partners, and develop the human connections that drive operational success.





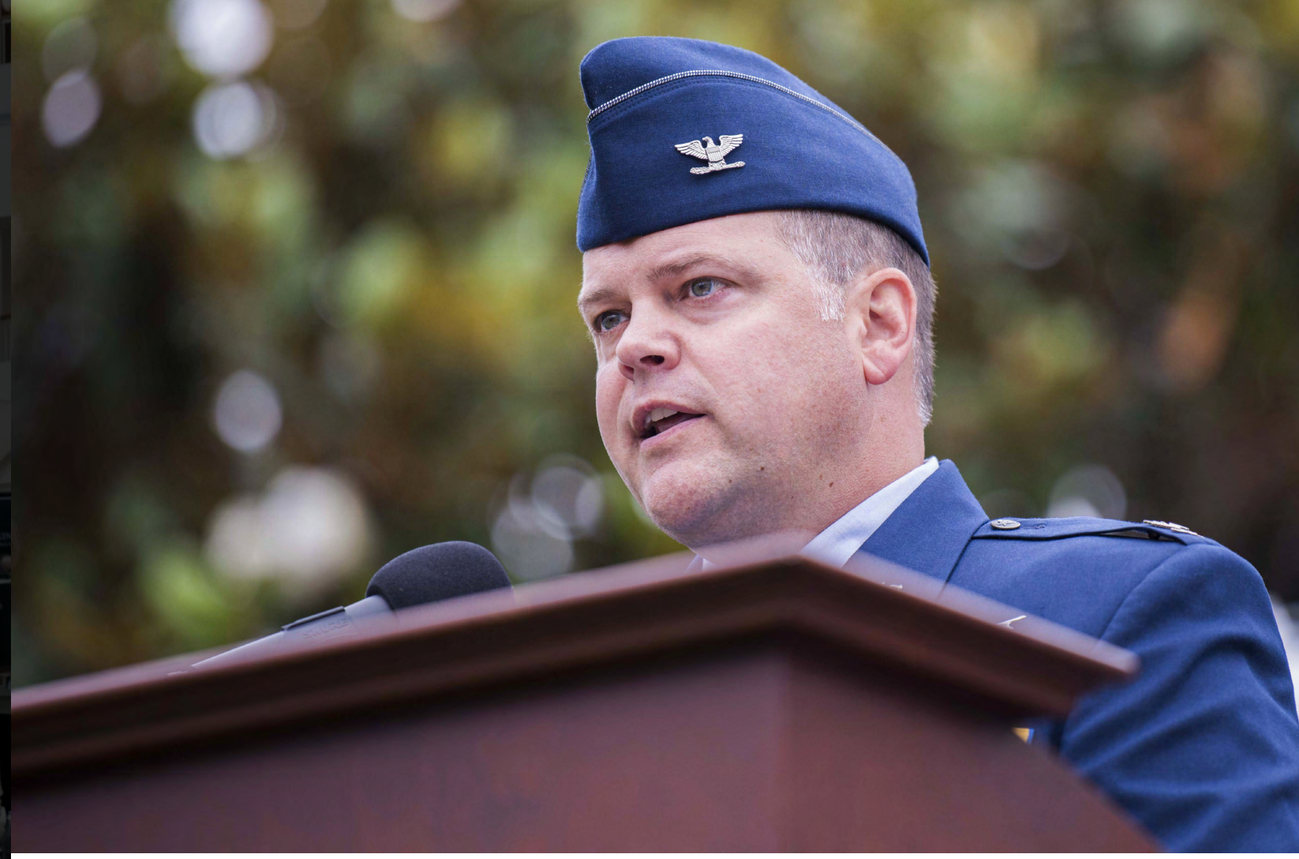
The Creator League
Learn. Create. Compete.

The Creator League is a workforce development program and competition for DoD personnel, veterans and their families. The initiative offers an online training curriculum for novice and advanced software developers. Additionally, The Creator League hosts virtual competitions for beginner and experienced developers to earn industry standard certifications.

Eligibility: All DoD personnel, veterans and their families.

Join the community for the latest news, announcements and collaborate with Creators!

JOIN THE DISCORD!



Col Horne emceeing Lt Gen (ret) JT Thompson's retirement ceremony at Los Angeles AFB, CA

Launch Leaders: Colonel Horne's Insights on National Security in Space and Fly Fishing

By Martin J. Amen, President of SFA Florida Chapter

Colonel Horne's interview was conducted shortly after the SFA Spacepower Conference and provides a comprehensive insight into the challenges and responsibilities associated with the US Space Force's launch demand. As the Senior Materiel Leader for the Launch Execution Delta, he oversees national security space launches. The surge in commercial

and national security launches poses a dual challenge of reassessing outdated criteria and preparing for a substantial increase in launch demand. Colonel Horne's strategic approach involves scrutinizing every process, challenging assumptions, and prioritizing efficiency to promptly meet warfighter needs. Reflecting on the historical setbacks of the late '90s, he outlines the changes that enhanced mission assurance, underlining the meticulous attention required in space operations. He envisions a pivotal moment in space logistics, where assured access to space will transform and revolutionize global logistics and space operations. Colonel Horne's leadership philosophy and advice for young Guardians emphasizes adaptability, self-awareness, and the significance of contributing to securing the nation's interests in space. As he unveils his daily routine and personal passions, including home brewing and fly fishing, a holistic picture of Colonel Horne's journey and the future of Spacepower emerges. This interview encapsulates the essence of the Space Force's mission and Colonel Horne's role in shaping the future of space exploration and security.

Interviewer Martin Amen (MA), President of Space Force Association Florida Chapter: Thank you, Colonel Horne, for taking the time to be part of the SFA Space Warfigher talks. To start, could you share your thoughts on the Spacepower Conference and the mission statement of the Space Force?

Col Horne: Absolutely. The Spacepower Conference in December was a remarkable event! The Chief of Space Operations (CSO) emphasized the inspiring and easy-to-remember mission statement: "Secure nation's interests in, from, and to space." What resonates is that every guardian should see themselves reflected in this mission statement. From a launch perspective, honestly, for the only time I can remember in 23 years in the launch business, we can see ourselves directly referenced in that mission statement, and it also aligns with our focus in the future with Space Mobility and Logistics doing things like returning cargo from space, rocket cargo delivery, and on-orbit servicing.

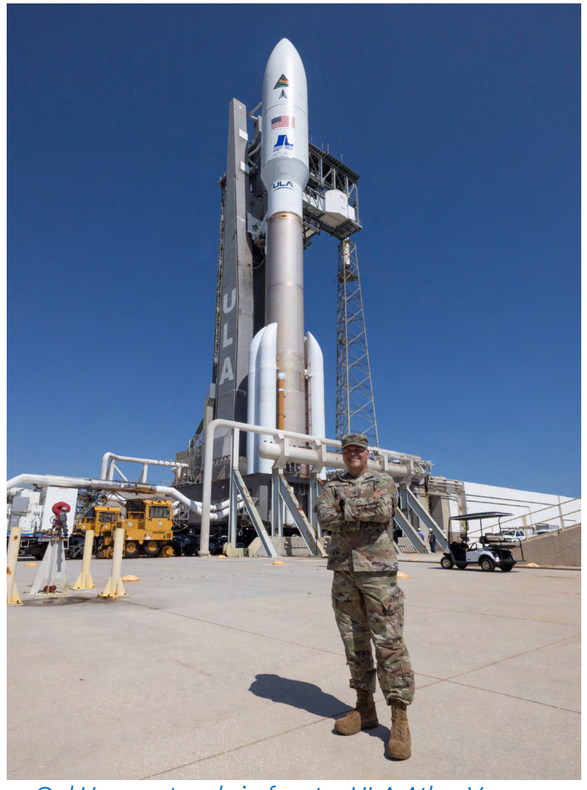
The criticality of securing space is comparable to how our Navy protects sea lines of commerce. There's a very near-term relevance that most people think is years away but is coming quickly. Imagine losing the freedom of navigation and commerce in our oceans, like what is happening off the coast of Yemen

with commercial shipping. Losing our space capability would have a more catastrophic effect and essentially could plunge the world into chaos. The Space Force is shifting from treating space as an active enabler of terrestrial operations to recognizing it as a place where activities unfold militarily and economically. It's a geographical combatant command, and now, with the term "astrographic" reflected in the Joint Doctrine, space is acknowledged as a place, not just a capability.

The Conference did a fantastic job highlighting all these things and stressing that over the next decade, the USSF will define the implications of this shift, emphasizing the dual role of providing vital services and actively operating in space. Setting up the Space Force reflects the acknowledgment that space is not just a tool; it's a place we must protect, work in, and explore. That's a transformational shift, and it is inspiring to be a part of it.

MA: With your recent role as the Senior Materiel Leader for the Launch Execution Delta, could you elaborate on your responsibilities and the significance of national security launches?

Col Horne: Certainly! Since August,



Col Horne stands in front a ULA Atlas V Rocket preparing to launch the SILENTBARKER mission for the NRO. Photo

I've led a team overseeing Vandenberg and Cape Canaveral national security launches. Our role is vital in executing launches safely and effectively. We work with launch providers like SpaceX and United Launch Alliance to ensure every rocket delivers the required capability to orbit.

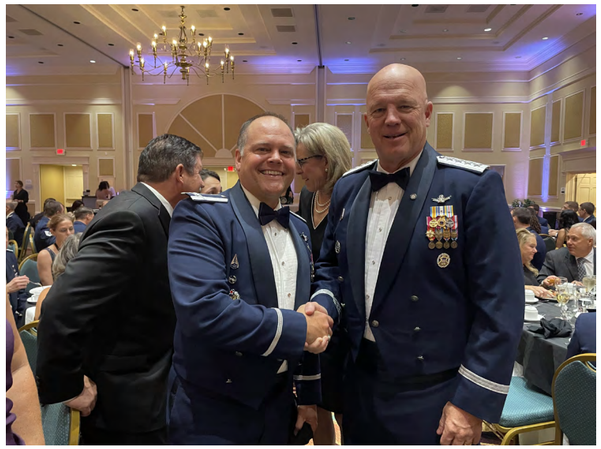
The stakes are high in national se-

curity launches. Military assets are expensive, and the loss of a satellite has immeasurable consequences. Our primary mission is to ensure the launch service meets satellite requirements, providing a secure and reliable ride to space. This involves meticulous planning and execution to safeguard the nation's interests.

MA: You mentioned challenges in your role, especially with the surge in national security launches. What are the main challenges, and how do you plan to address them?

Col Horne: Two primary challenges lie ahead. First, we're reassessing assumptions made in the early 2000s regarding launch success criteria and geopolitical factors. Balancing the need for speed, innovation, and risk-taking is crucial as we navigate the changing landscape.

The second challenge is the imminent surge in National Security Space (NSS) launches. With a significant increase in national security launches expected, we're preparing for a steady state that could double our previous record of 9 NSS launches in 2014. It's not just the number of NSS launches but the number of payloads on each rocket. In the past, it was always one payload; now, in almost all cases, it is more than one, and usually multiple payloads on each launch. The question is how to execute these launches efficiently, ensuring speed and quality in response to warfighter needs. We're scrutinizing every process, challenging assumptions, and aiming for maximum efficiency.



Col Horne recently with Retired General John Raymond (Photo M. Amen)

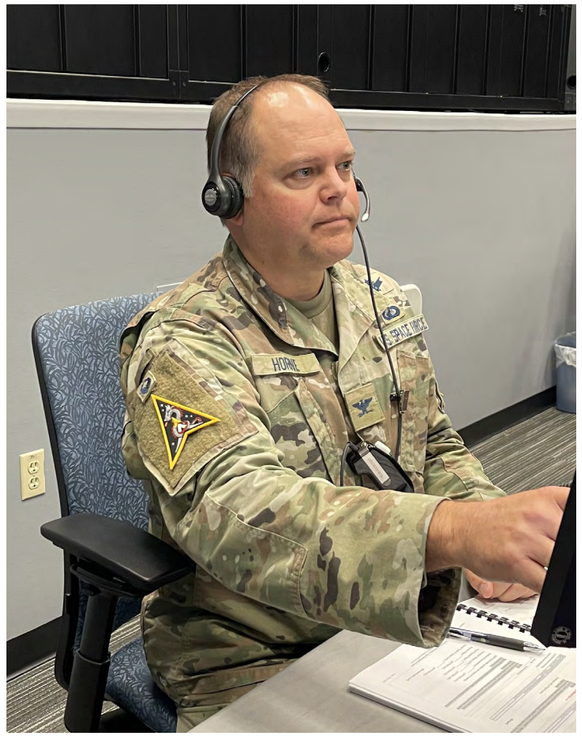
MA: Reflecting on the history of the National Security Space Launch Program and its setbacks in the late '90s, what changes were implemented to enhance mission assurance?

Col Horne: The setbacks in the late '90s prompted a comprehensive review led by General (ret) Moorman. We reorganized launch operations, established clear lines of authority, and documented mission assurance processes. Partnering with Boeing and Lockheed under the Evolved Expendable Launch Vehicle Program, we implemented an innovative other transaction authority arrangement to develop the next generation of rockets in a public-private partnership, leveraging the forecasted growth in commercial space missions.

Our focus in that development was on baking in performance and reliability from the critical design phase, ensuring recurring assessments of technical aspects for each launch. The complexity of space operations demands meticulous attention, and we've learned that one failure can lead to a bad day. Some companies make space launches look easy, but I'm sure they'd tell you it's still tough if you asked them. A million things must go exactly right, but only one must go wrong to have a terrible day. The biggest question is how we adapt those extremely successful processes to today's changing strategic context.

MA: Looking ahead, you mentioned a pivotal moment in space logistics. Could you elaborate on what you foresee as the future of assured access to space?

Col Horne: In my opinion, logistics is the next great pivot in space. Maneuvering in space as quickly as on the sea, air, or ground will redefine space operations. We're working on



Col Horne at launch console preparing for an upcoming launch

enabling capabilities like refueling satellites and on-orbit repairs, fundamentally changing how we approach space operations. Imagine if a space operator no longer had to care how much "gas" was in the tank as they planned orbital maneuvers. It would be entirely game-changing to maneuver at will and with impunity. Or think about the capability to

deliver a C-17's worth of cargo anywhere in the world in an hour. This will revolutionize our ability to operate in space with agility and, in turn, reshape our understanding of global logistics. Most think it's science fiction. We would argue it's already happening, and we need to invest in leveraging these emerging technologies and ensuring our unique requirements are factored into the innovation of our industry partners.

MA: On a personal note, what is your leadership philosophy, and what advice do you have for young Guardians entering the service?

Col Horne: My philosophy, influenced by Warren Bennis, emphasizes self-awareness for leaders. Warren Bennis wrote an incredible book on leadership called "On Becoming a Leader, " which profoundly impacted my personal leadership philosophy. Bennis argued that knowing one's strengths and weaknesses and understanding the team's dynamics is foundational. Leaders must adapt to situations and collaborate effectively with their teams. To young Guardians, I advise focusing on doing your job to the best of your ability, and rest will take care of itself. Embrace change and innovation, as it's a dynamic time, and trust that doing your part to secure the nation's interests in space will lead to a meaningful and successful career.

MA: Finally, a fun question. If you could send a book into space to represent Earth cultures, which book would you choose?

Col Horne: I'd choose "A Hitchhiker's Guide to the Galaxy." Its humor and exploration of humanity make it a unique representation of our culture and approach to space. Ironically, Earth has to be demolished to provide a space highway. I think it celebrates the quirkiness of humans well and takes a bit of a tongue-in-cheek approach to how small we are in the grand scheme of things relative to the entire universe. Our future alien allies would find our take on ourselves and them humorous.

MA: We touched on this topic a little, but what would you advise young Guardians coming into the service today?

Col Horne: I liked something General Saltzman said in his fireside chat with Lt Gen (ret) Liquori at the Spacepower Conference [in December].

General Liquori was asking some excellent questions from the field, precisely the right questions, and

one of them that we often hear and sense from our teams is this idea of change and change fatigue. General Saltzman said, "It's interesting; people aren't resistant to change when they believe it's necessary and has to happen, and they like it. It's the change they don't understand or disagree with; that's when they get change fatigue." So, our job as leaders is to articulate what's happening clearly and the why behind it.

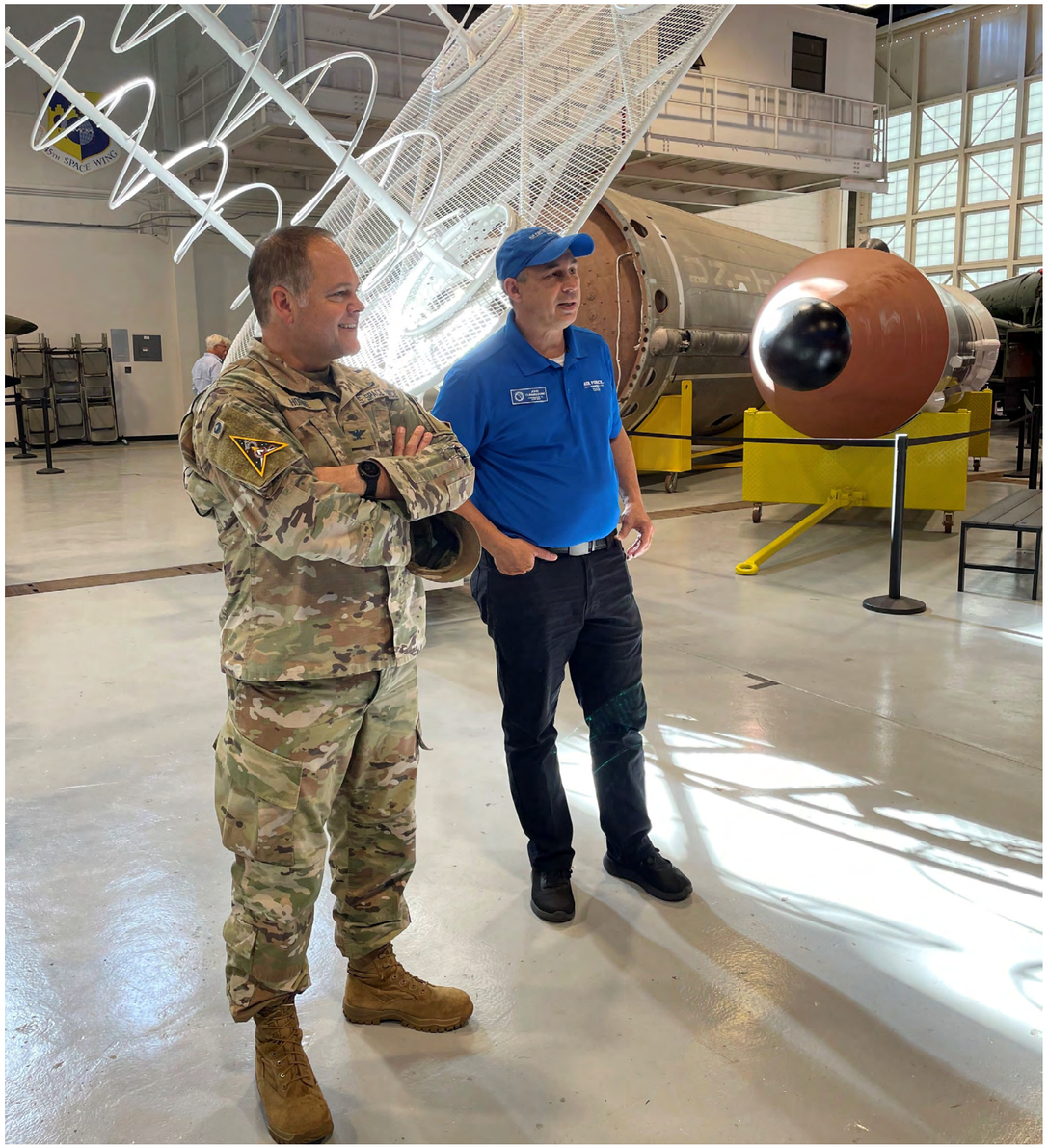
For our Guardians, I would say, we're in a dynamic time, and there's a lot in the air, a lot of open questions, and there's this sense in the force, too; I hear a lot, what's the path? Where am I headed? What's your advice for me? I have consistently said to do your job and do it to the best of your ability, and the rest will take care of itself. I like one of our luminaries who is not celebrated as much as he should be, Col John Boyd. He was an Air Force fighter pilot, went to grad school at Georgia Tech, and realized he could apply engineering thinking to the art and science of flying a fighter jet. He also had a Steve Jobs or Elon Musk-type personality in that he was a disruptor willing to buck the status quo and challenge traditional thinking. One of the things he said that has stuck with me is, "Do you want to be somebody, or do you want to do something?" I think at this point in history, and you heard General Saltzman say this too, we are writing history, and so let's be sure that the history we write is something we're going to enjoy reading someday and that it is successful, but what an incredible opportunity as a Guardian to be a part of a new service and to write history and to do something significant for the world, not just our country.

MA: What's a day in the life of Colonel Horne?

Col Horne: I start my day at 6 am and do something from a wellness perspective, whether just spending time with my faith, which is essential to me, or at least several times a week, some fitness activity. I just finished the T-Minus 10-miler and have been training for the last few months. I am giving my body some rest; however, I will return to high-intensity interval training again soon. I consider all this sharpening my sword to prepare for the day. Then, I go into the office and hit the ground running with all aspects of managing launch operations and interfacing with my teams.

We have a couple of weekly tag-ups where we talk about the hot topics we're grappling with. There is much travel in this job, so there isn't a single day or week that's the same.

We often head to meetings with our launch service providers to discuss the latest status on what's going on with the rockets. In launch rehearsals on console, we routinely practice with whichever mission partner is



Col Horne up and atom for the day, meeting with his team and industry partners. (Photo)

launching on that rocket because they don't do it as often as we do, so we practice with them and run them through how we do launch operations.

So, any given week, I'm meeting with launch service providers, and I'm meeting with our mission partners. We're practicing the next launch operation. I also hold meetings with our teams throughout the week, where we're working on some of the strategic priorities. I discuss preparing for the surge in upcoming national security launches. Then I mix in a little community outreach and things like that. We've connected well with the local chapter of the Parents Association for the Air Force Academy. So, we engage with local cadets and their parents and show them what life will be like in the service when they graduate. We also have a vibrant civilian-military group here in the area around Cape Canaveral, where we interface between the senior leaders on base and the senior leaders in the community.

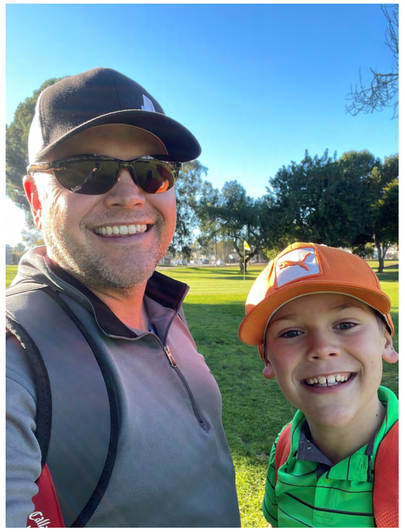
MA: Can you tell me about your past in home brewing beer and if there is a future brewing beer in Space?

Col Horne: One of my close friends and I sat down recently, and we had a beer brewed from hops flown into space on the Inspiration-4 mission, the first commercial mission to space with private astronauts. I believe it was a Samuel Adams brew called "Spacecraft." It was great. It was just perfect and delicious. I would love to know what a beer would taste like that was brewed in space. I'd love to do that experiment! If Jared Isaacman is looking for that, I'll happily join that mission and be the resident space homebrewer! It would have to be a Belgian or a Belgian IPA. I'll combine the two in space. That'd be like a trifecta—a space-brewed Belgian IPA.

MA: As for off-time activities, I have heard you like fly fishing.

Col Horne: I do, as well as Golf. I don't know if this is why I enjoy these activities so much, but I mentioned earlier, in a rocket launch there are a lot of things that must go right and just one thing that could go wrong to screw it up. Fly fishing and golf are like that, too. On their surface, both seem like such a beautiful and elegant thing, much like a rocket launch. But they are also highly complicated activities below the surface, and if you want to succeed, you have to execute all those complex elements flawlessly. One tiny error and you shank a drive, get your line tangled,

or worse, hit the water wrong and spook the trout you're trying to land. So you put tremendous amounts of time into perfecting your craft, achieving something fascinating and incredible. You catch the fish; you get the ball in the hole and hit it perfectly. In fly fishing, your cast is perfect, managing all the different variables that could go wrong, and you hit the exact point on the river that you needed to catch that big brown trout—the same thing with golf and, to some degree, rocket launches. Watching all those elements come together in harmony and achieving something demanding, rewarding, and beautiful is so much fun.



Col Horne and his son, Asher, at their favorite local golf course (Photo)

MA: Do you have a fond memory from Fly Fishing that you can share?

Col Horne: One time I remember was when I was a nuclear missile officer at Malmstrom Air Force Base in Montana. My wife, son, and daughter, our youngest, who had not been born yet, were camping near the Sawtooth Mountains. I hit this stream early in the morning with the sun rising, and it was a beautiful fall day. When I returned to camp, my wife asked, "What took so long?" I said, "What are you talking about? I was only out for an hour." She said, "You have been gone for three hours." It had happened, something I had read about and talked about with other fly fishermen; I had experienced this moment where I was entirely in the flow… a moment when time stood still. I was working the stream, and the rest of the world was gone. It was just the river, the sun, the fish, and me. What felt like five minutes was hours. This incredible feeling ended when the hairs stood on the back of my neck, realizing I was in grizzly country. It's not a place to lose your awareness as Smokey the Bear could be right behind me, and suddenly, I'm the prey and no longer the predator. That's when I decided to return to camp, but it was just one of those beautiful moments.

MA: Thank you, Colonel, for your time, and wow, the future is bright!

SEMPER THEATRUM

Open the Capsule: Relive SFA's Space Warfighter Talks

SFA's Space Warfighter Talks allow viewers to get to know leaders in the U.S. Space Force, learn more about what they do, and understand the greater impact of the Space Force on U.S. National Security. Check out our recent releases!

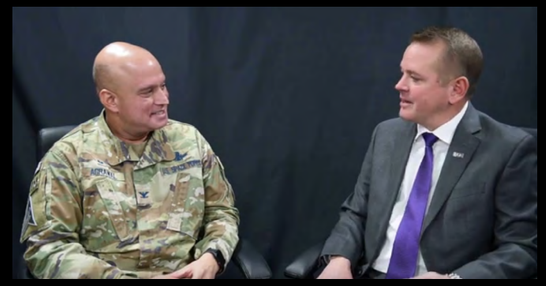
Watch the Full Podcast on YouTube!

Lt Gen David N. Miller, Jr., Commander, Space Operations Command

Lt General David "Rock" Miller, Jr. became the second ever commander of United States Space Force Space Operations Command (SpOC) on Jan 9, 2024. In our exclusive interview, Lt Gen Miller offered insightful perspectives on current threats, strategic priorities, and the future trajectory of SpOC.

Col Agrawal, Commander, Space Delta 2, Space Operations Command, United States Space Force

Col Raj Agrawal sat with SFA's Mike Anderson and discussed how the Space Force is building on and building out the combat spacepower of the United States and dives deeper into Space Delta 2 - Space Domain Awareness (SDA) and Space Battle Management (SBM).



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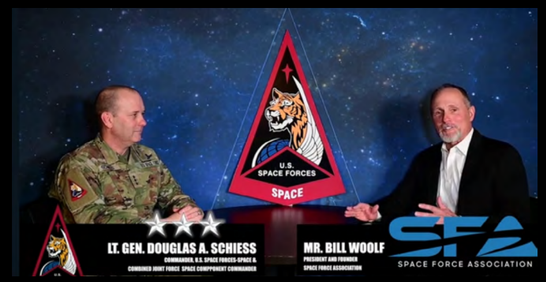

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Lt Gen Schiess, Commander, U.S. Space Forces-Space, United States Space Force

Lt. Gen. Douglas A. Schiess, Commander, U.S. Space Forces - Space; and United States Space Command's Combined Joint Force Space Component Commander sat with SFA's Bill Woolf and discussed LT. Gen Sheiss's promotion, Space Forces Space, Space Operations Command, the importance of space and space superiority, grapple and nesting doll satellites, and more.

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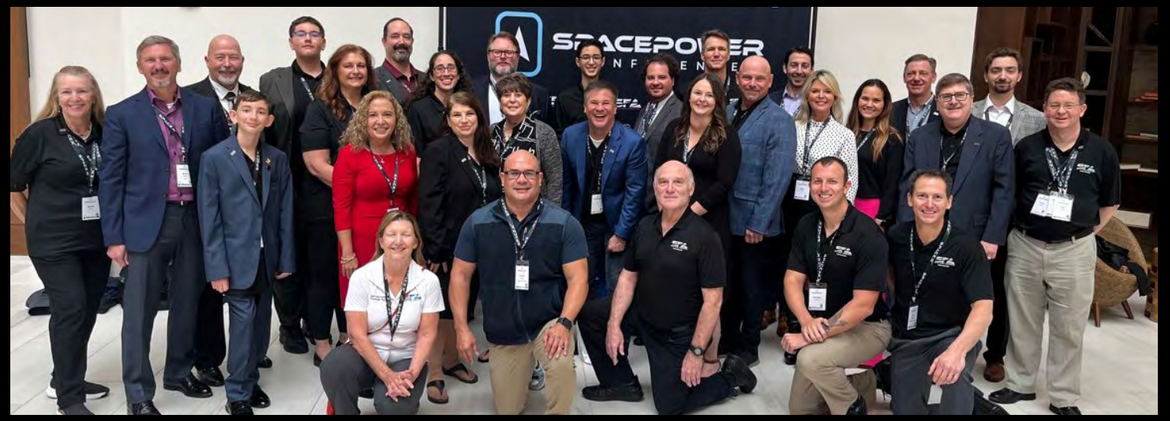

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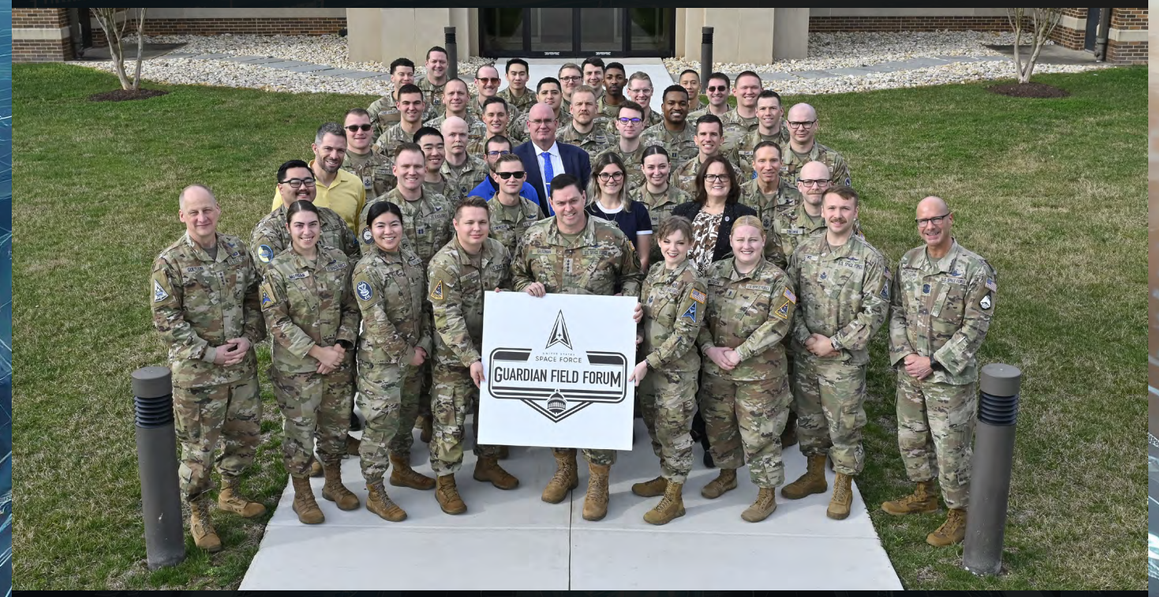
USSF WORKFORCE DEVELOPMENT

SPACE FORCE HOSTS ANNUAL GUARDIAN FIELD FORUM

Secretary of the Air Force Public Affairs



Chief of Space Operations Gen. Chance Saltzman, center, poses with attendees of the Guardian Field Forum at Joint Base Andrews, Md., March 15, 2024. The forum is a week-long event that brings together junior Guardians and senior Space Force leaders to collaborate on initiatives to improve the Space Force. (U.S. Air Force photo by Eric Dietrich)

The Space Force hosted its second annual Guardian Field Forum at the Gen. Jacob E. Smart Conference Center at Joint Base Andrews, March 11-15.

The week-long professional development event brought together 40 competitively-selected enlisted, officer and civilian Guardians to present feedback, recommendations, and innovative ideas directly to their peers and senior leaders.

“This forum bridges the gap between headquarters and the field on issues leadership might be missing,” said Chief of Space Operations Gen. Chance Saltzman. “Getting this feedback is critical to the success of the senior staff.”

At this forum, Guardians, nominated by their respective Deltas, presented their most important issues or recommendations to the other Deltas. The group then voted to determine the top themes that had the most overlap across the 22 initiatives that were presented. The teams selected three initiatives: strategic communication and collaboration, emerging technology for Guardians, and readiness improvements.

Some of the topics discussed included:

- A consolidated and streamlined communication platform for Guardians to access all pertinent information at a single source.
- A proposal for a combined civilian, government and military cloud-based satellite marketplace.
- Improved infrastructure development policies to support the rapid acquisition process.

The Guardians spent the week collaborating and discussing amongst

themselves and with industry partners to consolidate their ideas into three initiatives that were presented to leaders during the Space Force Senior Leader Summit.

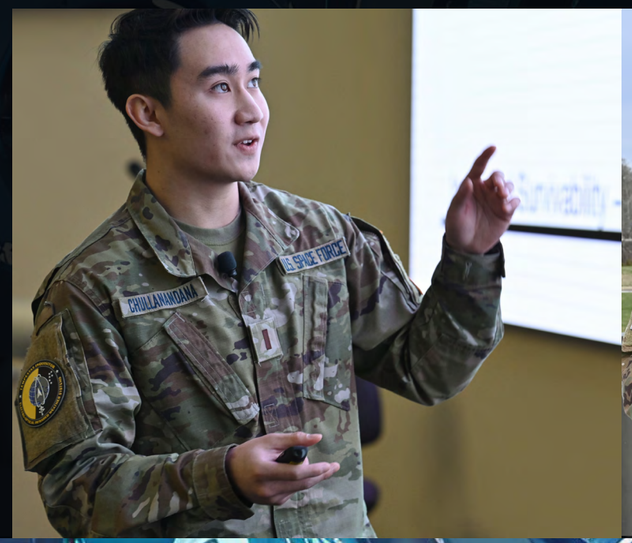
“I challenge you to think outside the box, challenge assumptions and the status quo,” said Chief Master Sgt. of the Space Force John F. Bentivegna. “Go back to your units, share your experience with Guardians and always know we hear you and your voice matters.”

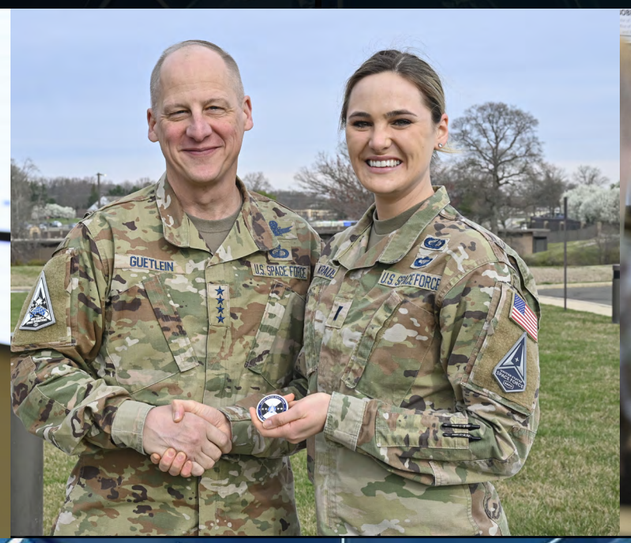
Throughout the forum, Maj. Gen. Steve Whitney, Space Force director of staff and senior Guardian mentor, spent time with the Guardians, providing mentorship and emphasizing the need for forums like this.

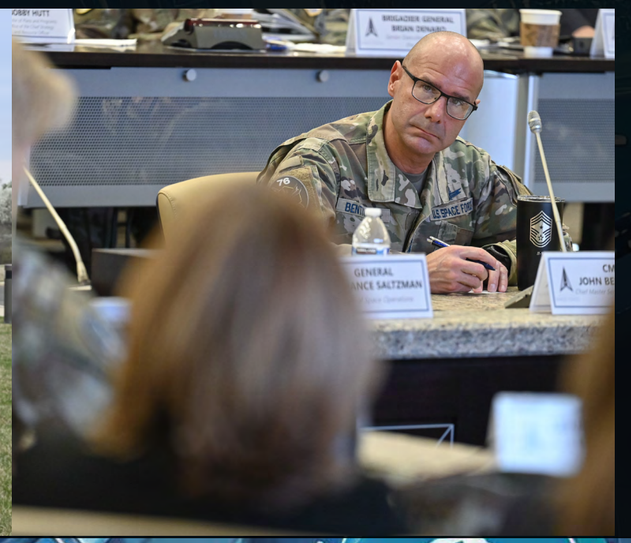
“Be aggressive, get after it,” Whitney said. “We don’t have the time, we don’t have the people, to play it safe.”

Closing out the forum, Saltzman reiterated the importance of Guardians sharing their ideas and developing solutions to issues together.

“This is a chance to get feedback we need to address the issues that are of most concern across the force,” Saltzman said.

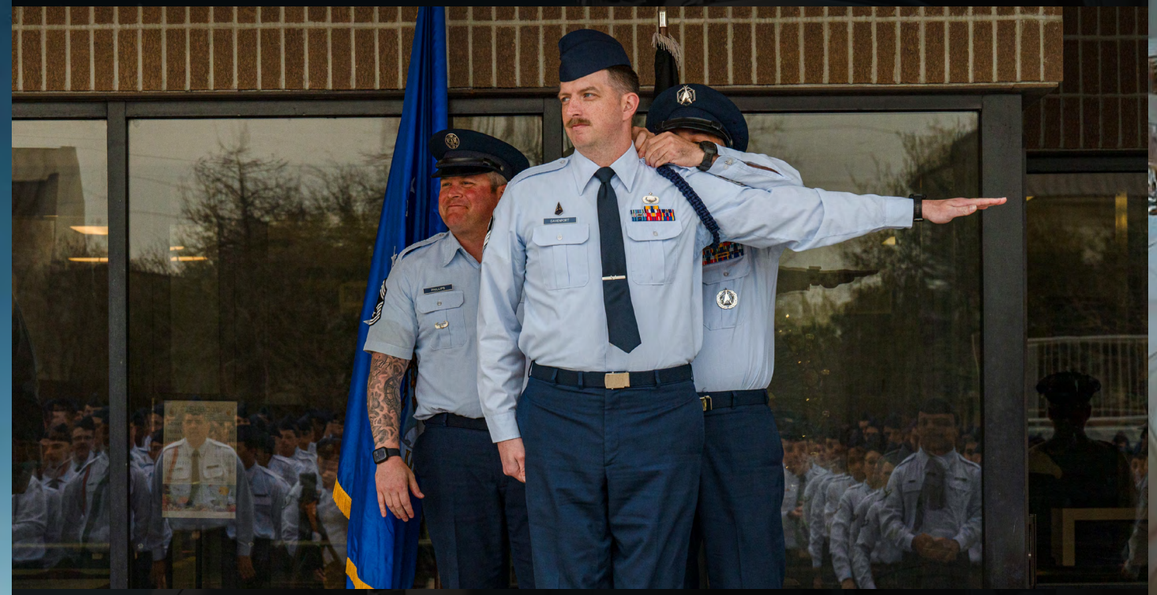






SPACE FORCE APPOINTS FIRST GUARDIAN MTL

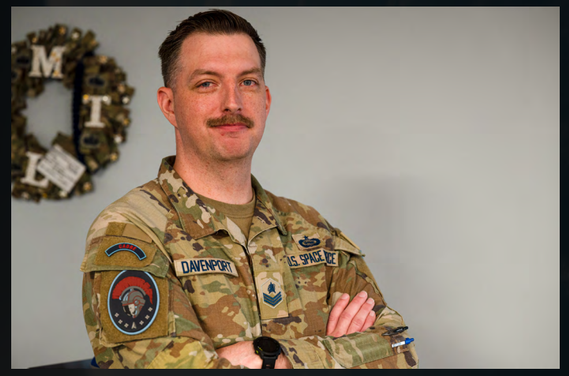
Space Training and Readiness Command Public Affairs



U.S. Space Force Sgt. Thomas Davenport, 533rd Training Squadron, Detachment 1 noncommissioned officer in-charge of Guardian Development, receives his blue braid, or aiguillette, during his graduation ceremony from Military Training Leader School at Keesler Air Force Base, Miss., Feb. 29, 2024. Davenport is the first Space Force Guardian to graduate from MTLS. (U.S. Air Force photo by Senior Airman Trenten A. Walters)

On Feb. 29, standing at attention with his left arm extended, Sgt. Thomas Davenport made history when the distinctive blue braid, or aiguillette, was secured to his shoulder, signifying his official designation as a military training leader – the first in the Space Force to earn this title.

For every Guardian, the journey into the Space Force begins with **basic military training,** a rigorous indoctrination into the service led by military training instructors. Upon completing BMT, enlisted



Sgt. Thomas Davenport, 533rd Training Squadron, Detachment 1 noncommissioned officer in-charge of Guardian Development, poses for a photo during Military Training Leader School at Keesler Air Force Base, Miss., Feb. 22, 2024. Davenport is the first Space Force Guardian to graduate from MTLS and be certified as an MTL. (U.S. Air Force photo by Senior Airman Trenten A. Walters)

Guardians transition to various detachments across the United States, embarking on their next phase of training specific to their Space Force specialty code.

At these detachments, Guardians make their first contact with MTLs, picking up where MTIs leave off. Their roles encompass a broad range of responsibilities, including orchestrating physical training, overseeing daily formations, conducting detailed inspections and offering mentorship and counseling.

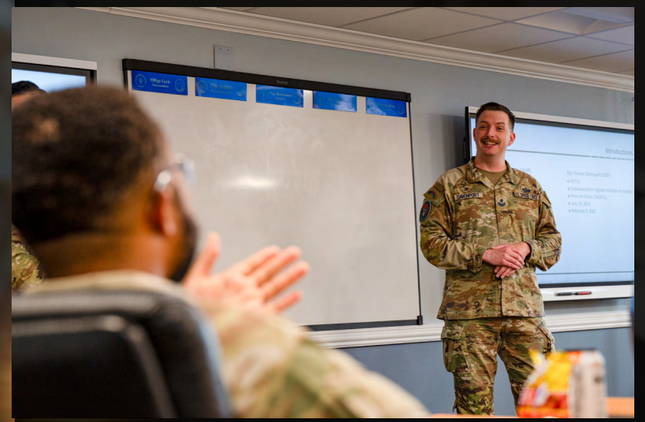
Historically, the Space Force leaned on Air Force MTLs for this crucial role. Davenport's achievement marks a significant milestone for the service, as he becomes the first Guardian to serve in this capacity.

Assigned to the 533rd Training Squadron, Detachment 1, at **Goodfellow Air Force Base**, Texas, Davenport shoulders the responsibility of guiding and mentoring Guardians for the entirety of the initial skills training for intelligence SFSCs.

"Being the first Guardian MTL is not just a title, it's a responsibility to embody and impart the Space Force's core values effectively," Davenport said. "This role allows me to lay a foundational understanding of character, connection, commitment and courage, crucial for every Guardian. Through active engagement and tailored mentoring, I aim to not only prepare them for their operational roles but also to develop future leaders who embody these core values."

Road to the Blue Rope

A Sebring, Fla., native, Davenport spent his first seven years in the Air Force as a communication signals intelligence analyst before transferring into the Space Force in February 2021.



Sgt. Thomas Davenport, 533rd Training Squadron, Detachment 1 noncommissioned officer in-charge of Guardian Development, gives a briefing during Military Training Leader School at Keesler Air Force Base, Miss., Feb. 22, 2024. Davenport is the first Space Force Guardian to graduate from MTLS and be certified as an MTL. (U.S. Air Force photo by Senior Airman Trenten A. Walters)

"For me, joining the Space Force was a no-brainer, especially being part of a unit transitioning into it," said Davenport. "I love space, I love doing signals analysis related to satellites and understanding how the signals operate to, from and in space with each other. It was always so interesting to me because it genuinely challenged me every single day. I had to push myself to understand and critically think outside the box."

U.S. Space Force Sgt. Thomas Davenport, 533rd Training Squadron, Detachment 1 noncommissioned officer in-charge of Guardian Development, gives a briefing during Military Training Leader School at Keesler Air Force Base, Miss., Feb. 22, 2024. Davenport is the first Space Force Guardian to graduate from MTLS and be certified as an MTL. (U.S. Air Force photo by Senior Airman Trenten A. Walters)

Davenport appreciated the technicality of his work but felt the next step of developing his expertise was to learn how to prepare other Guardians and Airmen to do the same job, he said. His passion for developing the next generation of Guardians that led Davenport to pursue an opening at the 533d TRS Det 1.

As the Noncommissioned Officer In-Charge of Guardian Development, Davenport excelled in facilitating the professional growth of Guardians within the training pipeline, working alongside his Air Force MTL counterparts.

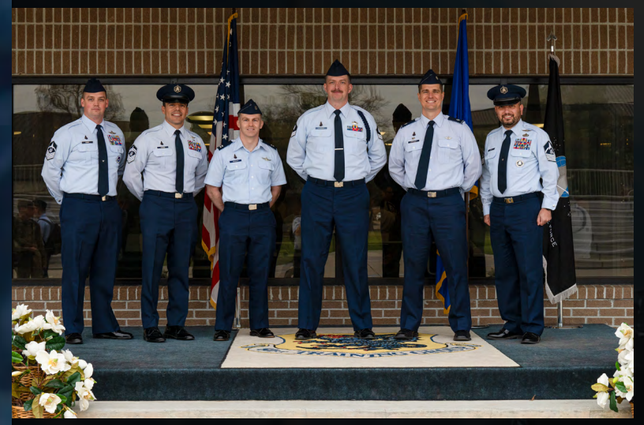
"I initially expected to focus on cryptologic management when I arrived here," Davenport said. "However, realizing our unit was understaffed and our Guardians needed support, I naturally stepped up. Being who I am, if people needed to be taken care of, I was going to make sure they were taken care of. I made sure to learn from Master Sgt. Dean [Air Force MTL] and Tech. Sgt. Brune [Space Force], who both laid the foundation for me to hit the ground running immediately. I took every ounce of information they both had for me and was fulfilling a double duty, in a sense."

Seizing a dual role with enthusiasm, after six months, Davenport was offered an opportunity to enhance his leadership capabilities at MTL School, or MTLS, at Keesler Air Force Base, Mississippi.

"Building combat-ready and resilient Guardians begins with growing and shepherding our Guardians carefully during their first 24 months of service," said U.S. Space Force Chief Master Sgt. Paul Norris, Space Delta 1 senior enlisted leader. "As such, Guardian MTLs are a critical part of the growth and development needed to invest in the talent and expertise our Guardians bring while attending technical training schools."

Norris said the establishment of Guardian MTLs will continue to foster the continuum of culture while establishing new avenues for Guardians to connect, share in combined challenges and fulfill the promise of a Space Force experience for Guardians, by Guardians.

"Sgt. Davenport's passion to serve is evident in the way he is cultivating and building Space Force culture, while instilling the mindset early on for Guardians to understand the importance of rowing in the same direction as one team, working together at speed," Norris added. "The entire Space Delta 1 team is extremely proud of Sgt. Davenport's accomplishments, and his lasting impacts will surely be felt for generations to come as more and more teammates follow the trail he blazed to lead as Guardian MTLs."



Sgt. Thomas Davenport, 533rd Training Squadron, Detachment 1 noncommissioned officer in-charge of Guardian Development, center, poses for a photo with Space Delta 1 leadership following his graduation from Military Training Leader School at Keesler Air Force Base, Miss., Feb. 29, 2024. Davenport is the first Space Force Guardian to graduate from MTLS and be certified as an MTL. (U.S. Air Force photo by Senior Airman Trenten A. Walters)

During the four-week MTLS, Davenport underwent comprehensive training that included understanding the MTL's role in shaping military discipline and professional development and addressing Airmen's and Guardians' needs adapting to military life.

The curriculum also covered a broad spectrum of topics such as leadership principles, counseling, Airmen and Guardian development, discipline, physical training and resiliency, all aimed at equipping MTLs to support new service members' holistic development effectively. Additionally, the program certified Davenport as a resiliency training assistant, further enhancing his ability to contribute to their welfare and success.

"The course was instrumental in providing me with the essential tools and skills necessary to motivate, counsel and ensure the comprehensive training and organization of Airmen and Guardians," Davenport said. "It has also offered insights into my personal growth."

Davenport attributes his accomplishment to the mentorship and collaborative spirit provided by his team at Goodfellow AFB.

"I want to make it very clear: this job is 1,000% a team effort," Davenport said. "On my own, I would have cracked. The only reason I'm able to do what I'm doing here is because of our team — Master Sgt. Dean, Tech. Sgt. Hollington, Tech. Sgt. Brune, Tech. Sgt. Vaughan, Master Sgt. Lefemine, Master Sgt. Bryant, and Major Tillman. Those initial months were tough, and I had to learn quickly, but I attribute my success to the guidance and mentorship I received from our team."

Davenport also expressed profound gratitude for the exceptional mentorship provided by the 17th Training Group's MTL cadre.

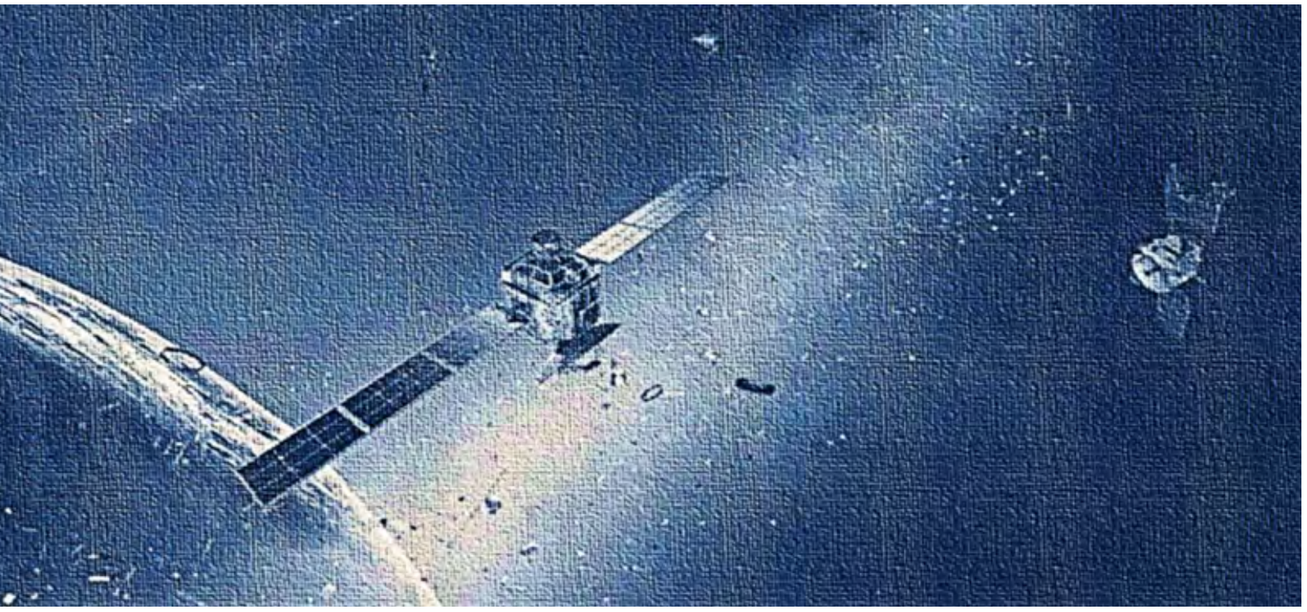
"Their support has been nothing short of amazing, fostering a strong rapport essential to our mission," he said. "It's this team dynamic that allows us to give our very best to our Guardians."

USSF WORKFORCE DEVELOPMENT

JOINT THOUGHT LEADERSHIP

SAFE PASSAGE

AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION



JACOB SIMMONS, Chief Master Sergeant
Guardian, United States Space Force

DR. NATHANIEL DAILEY
Vice President, Space Force Association, International Region

The views expressed are those of the author and do not necessarily reflect the official policy or position of United States Space Command, the Space Force, the Department of the Air Force, or the U.S. Government.

SAFE PASSAGE

AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION

The Oxford English Dictionary defines an *Axiom* as a generally accepted and perhaps self-evident principle or rule based on *empirical observations*, *logical analysis* of evidence, or *universal experience,* exempli gratia: *"The only constant is change."*

"Our highest priority is to preserve freedom of action in space."
– General Stephen Whiting, Commander, US Space Command

The word is out. *Space is the place!* We encourage its deep exploration and the civility of all its prospectors. We should be tethered together in *disciplined domain discovery* as we all take flight into the final frontier.

Technically, we are all *Space Natives,* not immigrants, all indigenous inhabitants of an interstellar inheritance. While securing our superiority in Space is our military's *moral responsibility,* sustaining ourselves through Space is our *mortal responsibility*. Its sanctity must be safeguarded through its shareholders' savvy, stewardship, supervision, and synergy to sway away from a space-age setback and save all of society's future from suffering in its silence. No one should be allowed to act as if above the law, even when in action above the *Kármán line*. The norms of rules and responsibilities, reasonability and regard, and right-standing and right-of-way in Space must be universally understood and sweepingly secured. The value proposition AND compelling consequence for *Safe Passage* in Space is the appreciation we will achieve unified options toward an unimpeded outcome; assured access and action … *ad astra.*

Our desired outcome is for the Space domain to stay out of war's reach, but if and when a fight knocks at the door, our dutiful responsibility is to deter aggression, defend national interests, and when necessary, defeat its threats. Reaching win-win scenarios is ineffectual when there are no compelling combination of carrot and consequence. However, it is just as essential to note that coercion is unlikely to be successful unless it is accompanied by credible assurances that the consequences are entirely dependent on the target's behavior and that the target's crucial security interests will remain unharmed if it complies. Without reconciling penalties and promises, there may be a lack of motivation to adhere to any agreements.[i] Deterrence attrits without an assurance of attribution. Mere

Space is our military's moral responsibility

No one should be allowed to act as if above the law, even when in action above the Kármán line.

ALL EYES UP!

threats of punishment are inadequate, potentially detrimental, or, even worse, escalatory. Ultimately, deterrence is most effective and effortless when there is an associated *"why"* to buy-in to, more so than an accountable *"if/then"* to be charged.

First, at a minimum, pairing *Peer Pressure* and *Self-Policing* should be considered *Primaries for Safe Passage* and must permeate for peace and pervade for prosperity as we pioneer across the Space prairie. *Peer pressure* is connected to the ideas of *deterrence* and *assurance*. The latter term is sometimes overlooked in modern strategy; however, it holds considerable importance in credible relations. Peer pressure musters the majority rule against misconduct and masses *many-v-one* as a whole-of-society committed to its sustainability, safety, stability, and security. We should avoid the tendency to circle the wagons too tightly, adopting a defensive stance that prioritizes protecting our interests alone. Rather, we must expand the tent and bring everyone in as equals with shared equity. *Self-policing* must be agreed upon ahead of holding misbehaving actors accountable. As with any effective neighborhood watch, all residents should be deputized-in-domain for first response, search and recovery, LEO to Cis-lunar space domain awareness (SDA), collision crisis and catastrophe mitigation, and space-effects emergency management. All must abide by the rules of the road and enforce the right of way.

Peer pressure musters the majority rule against misconduct and masses many-v-one as a whole-of-society …

As with any effective neighborhood watch, all residents should be deputized-in-domain …

These *Primaries for Safe Passage* will allow us to protect all of our interests in Space, responsibly steward the environment, avoid a destabilizing arms race, and ensure we have the freedom of access and actions to project *Spacepower* for our joint and allied forces to meet our national interest. Unfortunately, we see infractions and interference all the time, and it would be impossible and irresponsible not to interdict. Awareness and characterization are necessary for us to be credible. Still, observations of offenses must be followed by shedding light on irresponsible behaviors, debunking false flags, and calling out those who cross the line. Without clearly communicated and consistent consequences, we should expect our forbearance to be openly fought. This expectation is why it is so important for interstellar influence and implications to be international and not just internal. We must have strength in

SAFE PASSAGE
AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION

numbers; the multitude of nations sharing a common narrative. This imperative must be globally imprinted.

Second, we stay ahead by practicing the *Art of Preparation*. Our operational approach is based on the operations environment, so preparing that environment is our most advantageous approach. Preparation of global space professionals equals operational preparation of the environment. We should not accept or amplify the narrative that an adversary would approach its objectives in Space differently than in all other domains. Credibility must accompany capability, so the introduction and integration of *Space-Savvy Global Warfighters*, a term that defines supported and supporting armed forces personnel and partners possessing advanced skills and knowledge in leveraging space technology for global military operations, is a crucial component to creating a comfort zone to counterweight what may campaign us all into a combat zone—a skill-web to unweave a kill-web.

The etymology of *Space-Savvy Global Warfighters* encompasses adeptness in utilizing space technology to enhance their combat capabilities and operational effectiveness across the globe while taking into account the geopolitics, deploying joint, coalition, and combined forces worldwide, and using space assets to gain global situational awareness. *Space-savvy global Warfighters* have the compounding value of creating and cultivating capacity building for nascent space nations, joint research and development initiatives, and promoting international space norms and regulations. The significance of space-savviness has escalated in response to the growing dependence on space assets for communication, navigation, surveillance, and strategic deterrence. Effectively utilizing space assets in modern warfare is paramount for national security and global stability. The multifaceted nature of *Space-Savvy Global Warfighters* is called to action in contemporary military strategy and the broader implications for international security, encapsulating proficiency in space technologies, global operational capabilities, and combat readiness. Ahead of heightened tensions and hostilities high above, our ability to put purple into every process, and posture and present space-savviness is a strategic imperative for fostering partnerships that solidify the strength of shared efforts.

Credibility must accompany capability …

… our ability to put purple into every process, and posture and present space-savviness is a strategic imperative for fostering partnerships …

ALL EYES UP!

Third, Space institutionalization cannot be overemphasized. Beyond integrating space products, utilities, and services as key strategic advantages for national security, it is time to broadly institutionalize defensive and offensive space operations and effects as acknowledged *traditional military activities*[ii] for national defense. Sustainable and selectable Space Superiority is an urgent operational need, inherently improving or impacting decision advantage at a time and space of our choosing. Eclipsing mission support that is able to avoid with agility and adaptability, it is mission essential to affect with aggressive and afflicting aim. Our partners depend on Space employment with exponentially expanding and enduring effects that deliver disadvantages and dilemmas and impose untenable costs on the uncooperative with unapologetic conviction. Awareness, accessibility, authority, and accountability must be routine and normalized across our armed services, allies and partners, defense industrial base, and political machine. This normalization requires realistic and real-world reps and sets, otherwise known as *ops chops*. It requires muscle memory and being brilliant in the new battlefield basics; not the old benign blocking, but the new tactical tackling. Our D-Day battle rhythm has to become our regular daily routine, rehearsed to deter tensions today, and readied to dominate threats tonight.

Space institutionalization cannot be overemphasized.

… normalization requires realistic and real-world reps and sets, otherwise known as ops chops.

We must anticipate the fight ahead and be armed with the ammo to *fire for effect*. *Dynamic Space Operations (DSO)* allow us to adapt on the fly, and *Tactically Responsive Space (TacRS)* gives us the agility to augment fast. *DSO* and *TacRS* are methods, means, and most importantly the mindset to manufacture ahead, multi-source, and move with momentum, based on resourcefulness to redirect and remain ready in *real-time* rather than react to remain relevant in *rear-time*. We must exploit the *Gray Zone* asymmetries at the nexus of Space, Cyber, and Special Operations as a *modern triad*[iii] in the early phase, in irregular and unconventional warfare that may still appear like aggressive competition and avoidable crisis. The concept of *influence through confluence* supports integrated deterrence, campaigning, and actions that build enduring advantages. This junction, plays into and prioritizes protecting our power projection platforms and setting sentries on our Space-enabling infrastructure while creating conditions to counter a competitor's *Space Object Surveillance and Identification (SOSI)*

SAFE PASSAGE
AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION

centers of gravity with scalable Surface-to-Space and Space-to-security protocols, suppressing a sensor-to-seeker-to-shooter scenario short of the start. The conflux of influence, interruption, interrogation, and interception also factors in focusing on acting ahead of the threat through missile defeat versus reacting and responding through missile warning, track, and defense.

Defensively, our mission readiness, reputation, and resilience of the Space grid rely on our resourcefulness, responsiveness, refresh rate, and reach to rapidly repair, refuel, reload, replenish, and reoptimize to hedge risk, reward, and regret. Our assured access is our advantage always to set the pace, secure our place, and win the next space race. As we normalize the integration of space forces and institutionalize space operations as a *traditional military activity*, the demand to discriminate, diffuse, disable, and defeat to defend the domain will increasingly draw upon capability exponentialities such as a *Space-Enabling Special Operations, Cyber, Electromagnetic Assurance (SCEMA) Maneuvers* construct to find, fix, call for forces, and finish *with fluidity* against adversarial terrestrial nodes and networks as a prerequisite to protect and preserve all other planes. *SCEMA Maneuvers* are necessary for autonomy to access and act at will while also anticipating an approaching attack ahead of its arrival. Strategically, we must set the globe to set the theater tactically. Executed in pulsed operations that tasks tipping and cueing and tune timing and tempo, Space *SCEMA Maneuvers* enabling spectrum superiority, space-layer digital terrain dominance, and information influence can incapacitate or irreversibly cripple a combative by cutting off control centers and collapsing crosslinks without creating collateral damage or counterproductive consequences. The Stratosphere must be stratified.

Our assured access is our advantage always to set the pace, secure our place, and win the next space race.

We cannot deter or defeat what we cannot detect. The blind spot is not behind us; it is not beneath us; it is beyond us. We must get *far left of launch* so we do not lose. Chasing the competitor will not control crisis or cause combat cessation. Our course of action should cast a comprehensive net for a complete chain of custody with compelling consequences to contain chain reactions. Our claim on competitive endurance contends that we command the competitive edge. We must have the capacity to avoid operational surprise, the capability to deny first-mover

The blind spot is not behind us; it is not beneath us; it is beyond us.

ALL EYES UP!

advantage, and the competence to conduct responsible counterspace campaigning. Our *Theory of Success* is time-sensitive. The attributes of our assurance to and allowance amidst an Astrographic arena are *Setting the Conditions, Securing the Frontline*, and *Shaping the Future*:

Setting the Conditions

"Victory smiles upon those who anticipate the change in the character of war, not upon those who wait to adapt themselves after the changes occur." – General Giulio Douhet

Iron sharpens iron. Sharp, Space is our leading edge. Dull, Space can lead to the sum of our fear. As concerning as the contestedness of the closely-guarded cusp of our cosmos has come to be, our dependability to deliver capability by, with, and through an increasingly challengeable, compromisable, and corruptible ground-to-cyber grid terrain poses core command, control, and communication uncertainties. Great competition conflict will not be cordial. An opponent's first fires of a war in Space will start with terraforming the cyber terrain, cutting our TT&C ties, severing our sight lines, and seizing up the spectrum through saturation. Logically, we must become more lethal and long-lasting by letting *Spacepower-projecting* logistics be our launchpad to mission assurance and endurance. Our place in space must be patrolled, protected, and preserved for future generations, and we must be prepared to immediately intervene, if imperiled. Thus proactive, pragmatic, and programmatic thinking are requisites. *Rehearsed readiness* and a reputation to reinforce in real-time with retrofitting, retooling, and re-tasking will be required to redirect a rendezvous to war.

In his article *"A US Perspective on Deterrence and Geopolitics in Space,"*[iv] *Dr. Scott Pace*, observed the complexities and challenges in applying concepts of deterrence and geopolitics to space operations, particularly in the context of the increasing significance of space as a war-fighting domain. This analysis applies to the *Space-Savvy Global Warfighter* in areas that assure astrographic access and action:

Deterrence in Space Operations: The traditional elements of deterrence, such as attribution, signaling, credibility, resiliency,

Our Theory of Success is time-sensitive.

Great competition conflict will not be cordial.

SAFE PASSAGE
AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION

and cost imposition, while well-understood in the context of nuclear weapons, present unique challenges in conventional space operations. The potential for cross-domain escalation and the lack of experience in space as a war-fighting domain complicate the application of deterrence in space. For a Space-Savvy Global Warfighter, this underscores the need for enhanced capabilities in space domain awareness, resilient space systems, and clear strategies for signaling and attribution.

Geopolitics and International Cooperation: The geopolitical dimensions of space exploration and utilization emphasize the need for international cooperation. For Space-Savvy Global Warfighters, this aligns with establishing solid alliances and partnerships with complementary roles and responsibilities to extend the reach of space-faring nations far beyond the third instrument of national power.

Material Realities and International Constraints: Successfully applying deterrence and geopolitics in space requires balancing State power with international constraints. For Space-Savvy Global Warfighters, this means maneuvering through the intricacies of military forces, technologies and economic power in space while working within the cooperation framework. This skillful navigation prolongs peace and a stable space environment, which is beneficial for global security and the advancement of space exploration.

These considerations shine a spotlight on the need for Space-Savvy Global Warfighters in order to maneuver a multifaceted approach that includes solid space capabilities, strategic deterrence and adherence to international norms and laws, all essential for maintaining space security and stability and ensuring that space remains conducive to peaceful exploration and utilization.

Securing the Frontline

"Integrated deterrence is working – so far." – Frank Kendall III, Secretary of the Air Force

Space is sprawling; some may say it has become *urbanized* and bargaining for standards of its safety to be *unionized*. As

… the lack of experience in space as a war-fighting domain complicate the application of deterrence in space.

… skillful navigation prolongs peace and a stable space environment …

SAFE PASSAGE

AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION

crowded as Space is becoming with objects, it is equally expanding in crowds of operators. The barrier cost of entry is coming down as buy-in of its exploration is climbing. The number of participating Space faring, facilitating, and fixated nations is skyrocketing around the globe. The international community has intersected and interlaced in Space. This surge encompasses an array of nations involved in spacefaring endeavors, supportive infrastructure development, and a focus on space-based effects. Coalescing a coalition of the willing to integrate space systems and services into military operations assumes paramount importance in establishing an enduring strategic supremacy in modern warfare.

Becoming citizens of the *Global Commons* is achieved through investments to safeguard global stability and preserve the freedom of Space for future generations. Through cooperative Space-enabling strategies, nations can collectively enhance their collateral in the *Global Commons*, countering unilateral ambitions and contributing to a secure and sustainable space environment. We will not achieve the outcome of partnering by being passive or peripheral. Instead of promoting pluralism, the primary pacing peer is pressing our pressure points. So, *peer pressure*, as our forward operating presence, is the primer to peaceful persuasion. Partnering is our pathway to *Safe Passage* and *Spacepower*. While still silent, Space is no longer a simple segway for support. Space is now a soft power solution set for our sustainment, and the means to our modern society's survival.

Safe Passage is a solved problem set. It is a known known. Unfortunately, it is understood to only a select few, unclear to many, and unknown to most. Misunderstanding is causing missed opportunities. The simple solution to save the Stratosphere from surrender is to stand on the same strategy that serves to steer on the surface and sail on the seas: standards, sound traffic management, and situation sharing to suppress surprise. These stellar statutes set in motion the required *rules of the road* and *right of way* for a *rules-based order*. As a cohort on the cusp of Space, we can piece together patterns of life, bolster Battle Damage Assessments, increase characterization of Collateral Damage determinations, and escalate state of emergency declarations.

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Partnering is our pathway to Safe Passage and Spacepower.

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A host of first, second, and third-order ramifications, from military mission reduction to humanitarian repercussions, can manifest from a malfeasance or a malicious act. We corporately are obligated to collect, coordinate against, and course correct counter-actors as *space end users – v – in space abusers* who threaten to not just recklessly disrupt with undue regard, but those that would deliberately dismantle the dependability of the domain. Like on our power projecting bases, federated force protection in Space through forward presence and participation in upholding rules-based order are foundational to functioning as a connected co-existing *community* rather than as conditional and circumstantial colleagues. To *force multiply*, we must opt for an elevated economy of effort over division of labor. Under the auspices of altruism, we must act adhesively in agency to amortize risk to avoid a new arms race.

To ensure the regiment is "rightsized" for resilience, we must reach a rapport for responsible action. Hence, *establishing strong alliances and partnerships* is fundamental. These relations emerge from collaborative training programs, space-based intelligence and surveillance data sharing, and space technologies' coactive research and development. The result is a network of nations with integrated interests, intellect, and infrastructure. Strategically, *capacity building* for emerging Space nations assists new Space-farers in developing their space capabilities. Sponsorship includes onboarding potential presences and emerging enterprises into space by providing technical assistance, training, and talent-sharing. Joint research and development on space technology projects can lead to innovative solutions and echoing expertise, especially when pairings include joint satellite programs, shared space surveillance systems development, and research into space defense technologies. *Information sharing* and *intelligence cooperation* about potential threats gathered through space assets empower partners at each echelon as an enterprise. Crosstalk, in pre-emptive planning, allows for a coordinated response to global security challenges. Joint military exercises and operations with space-based components prepare nations for combined operations, enhancing interoperability and readiness in using space assets in conflict scenarios. *Promoting international Space norms* for space activities can help maintain a peaceful and sustainable space environment, which is crucial

Hence, establishing strong alliances and partnerships is fundamental.

Strategically, capacity building for emerging Space nations assists new Space-farers in developing their space capabilities.

ALL EYES UP!

for global security. By implementing these strategies, nations can collectively enhance their capabilities as *Space-Savvy Global Warfighters*. This collaborative approach counterbalances the ambitions of those who seek to dominate space for unilaterally beneficial or oppressive purposes. A united front of nations, well-versed in space technology and committed to mutual support, forms a significant deterrent against any entity aiming to become a leader of an unfree world. This strategy preserves the freedom of space and propels global stability and security.

Shaping the Future

"What binds us together will always be more powerful than what drives us apart." – Barack Obama, 44th President of the United States

Humanity's home is the heavens. We share space with the stars and are connected to the celestial. Space is our shared equity, underpinning, and top cover. Tragically, it is increasingly imperiled and at risk of becoming our all-inclusive adversity and shared suffering. The foundation for our future is our freedoms, but like our founding, the most familiar freedoms afforded by access and action in Space are not free. Space is the enabling infrastructure for our critical infrastructure. It is our *Global Commons,* and our shared stakes are significantly surging. To boldly go, we will bring in bystanders, blend in best practices, and build bridges as we band the world beside us, not just behind us. To start up, we must scale up on the whole-of-society successes to promote state partners into space partners, shore up *Security Cooperation* activities that set-in place shared strategic objectives, and step up the societal Space Intelligence Quotient and Emotional Quotient across a diverse swath of organizations and institutions; moving observers to member status in a multilateral sphere of influence.

Great Power Competition is engineering a space generation asked to muster together in the scientific advancements of war and master assembling in the artistry of peace to guard against a global culture change. The threat temperature is rising, and our thresholds, tolerances, trade spaces, and our theory of success will be tested. The courageous pace of competition pushes to prove with prowess; it is not perpetually paused by

Space is our shared equity, underpinning, and top cover.

To boldly go, we will bring in bystanders, blend in best practices, and build in bridges, as we band the world beside us; not just behind us.

SAFE PASSAGE
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the constraints of first having a burden of proof, dispelling any rumor of ever resting. Waiting to win is for the weak at heart, and *speed* to succeed is for the strong-willed. *Speed* is the substance of our future shaping and the evidence of its endurability. We must shape what is coming for us with a *sense of urgency*, not be shaped by what is coming at us with a *state of emergency*. Immediacy is the imperative. In Space, we must be *first-finders*. Achieving primacy in space necessitates proactive leadership, eschewing reliance on others, and embracing a pioneering ethos. *Lead turn and live on, or lag in latency and be left behind.*

These are historic times: economic prosperity, exploration pursuits, emergency preparedness, and expeditionary projection of Earth's protection. A way of life built up over decades can be brought down directly. Highly held norms of behavior are needed *above us* so we can enjoy norms of behavior *among us*. Without common grounding, Space has become highly congested and increasingly contested, and the gap is closing on our coveted "*defense-via-distance*" advantage, underscoring the urgency for collective action to preserve it as a resource for all stakeholders. To be conserved for all, Space must now become cooperative by all and of concern to all.

While the combination of coalitions, contributing commercial, and a collection of civil capabilities has complexity, creating a great power competitive cadence does not have to be complicated. We base our confidence on consideration, connections, and consistency in alignment with the consumer. We must be able to turn on a *DIME*. Global willpower for great world power competition is an endeavor that requires everyone's undivided attention to ensure that the *Global Commons* are sustained for the generational good of our great community. The ability to compass the challenges of *space encounters* hinges not solely on individual autonomy and defensive capabilities but on collective solidarity and shared defense mechanisms. To win, we must be *world-class*. The pivot to *Safe Passage* begins and ends with normalcy, not neutrality; scene-set by solidarity and sacrifice, not selectivity or sovereignty.

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To win, we must be world-class.

ALL EYES UP!

SAFE PASSAGE

AN AXIOM FOR ASSURED ASTRO ACCESS AND ACTION

All Eyes Up! *- An Axiom for Assured Access and Action*

We are on a verge, at a liminal time, drawing near to the dawn of an undiscovered day. Foresight and formidability will be the fail-safes for our Spacefaring freedoms, but we now find our off-world opportunities and operations confronted by the foreshadows of a fragile fate. To avoid or avenge an act of Astro-war, we need *Respected order, Responsible behaviors on orbit, and Responsive overwatch. *Primaries for Safe Passage, Art of Preparation, and Space institutionalization. *Setting conditions, Securing the frontline, and Shaping the future.* This is the sprint set before us and spirit set within us.

This is the sprint set before us and spirit set within us.

The prerequisite for persistent peace is the persuading promise that all parties will actively and aggressively protect the #1 priority – *preservation*. This factual acknowledgement cannot be found foreign or feigning. Inherently nested in our norms is the nobleness to neutralize ahead of any unnatural disaster, overtly dissuading or covertly disabling down to the node, to preempt and prevent in order to prolong those capabilities which disproportionately deliver the advantages of our way of warfare and dole out the allowances of our way of life. Our outer space coming of age cannot afford a rolling Spacepower outage, let alone the world as we know it being bankrupted by a blackout.

Our outer space coming of age cannot afford a rolling Spacepower outage …

As tensions extend in Space, our attention span must expand like Space. The ramifications of space-related disruptions will extend far beyond the realm of space-faring nations, reaching the reality of all earth-bounders equally; everyone, everywhere, not just the space-capable but the space-consuming. *Safe Passage* in, from, and to Space must be survivable and endurable for humanity to be hardened against a hostility in the heights from holding us all hostage at home, and to revector any high-velocity violations from violently veering our envisioned voyage off course; into a vast void. Agreeing to align on this *axiom* will advance our assurance to access and take action.

"For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace. We have vowed that we shall not see space filled with weapons of mass destruction, but with instruments of

SAFE PASSAGE

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knowledge and understanding … I do not say that we should or will go unprotected against the hostile misuse of space any more than we go unprotected against the hostile use of land or sea, but I do say that space can be explored and mastered without feeding the fires of war, without repeating the mistakes that man has made in extending his writ around this globe of ours." – John Kennedy, 35th President of the United States[v]

WE ALL HAVE THE WATCH!

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ALL EYES UP!

RETURN TO THE ATACAMA

By Maj. Nate Schuler

Turbulence rocked the plane as it made its final approach to the desert landing strip.

Major Theo Weis looked out of the window at the barren and sun-blasted surface of the Atacama Desert below. As they neared the ground, Theo could see a scattering of derelict mining sites, long since abandoned but preserved by the dry desert climate. He was here for the same thing these miners had come for over a hundred years ago: nitrates.

With the sudden collapse of the bioengineered fertilizer system, the 435-mile-long stretch of naturally formed nitrates in the Atacama deposit currently represented the best hope for the nations of the world to stave off total famine. War over the nitrates was not new. The Chileans had fought the Peruvians and Bolivians for control of the nitrate-rich section of the desert in the 1870s. Thousands of prospectors had gone into the scorching desert to mine the rich caliches, surface deposits of nitrates, for shipment to the rest of the world. The nitrates had been shipped all over the world, from Germany to Iowa and had helped feed the population boom of the late 1800s. The Chilean nitrates had only been dethroned by the invention of the Haber-Bosch process for synthetic nitrogen fertilizer creation in 1907.

“Sure, now we’re facing famine but it was the best idea we had at the time. We cut total global greenhouse gas emissions by 5%!”

Theo turned back from the window to the two civilians sitting next to him, “What’s that?”

“I was just telling Silas that despite it getting us into this current predicament, the use of NitroBac allowed us to cut a huge amount of greenhouse gasses from the atmosphere. The synthetic fertilizer system consumed 3% of the world’s annual energy output and generated a huge amount of greenhouse gasses. Switching to NitroBac bioengineered bacteria as a source of nitrogen allowed us to move away from all of that.” said Phoebe.

Theo gave a half-smile at the memory of the roll-out of “NitroBac”. It had been hailed as a miracle. The Russian invasion of Ukraine in 2022 and the following years of conflict had brought the issue of artificial fertilizer dependency to the forefront of humanitarian and food security concerns. Disruptions from failing Russian infrastructure and loss of shipping through the Black Sea had raised costs by over 30% and led to several famines throughout Africa in the mid-2020s. Combined with concerns over climate change, governments had poured vast sums of money into developing biological alternatives to the venerable Haber-Bosch process that had saved humanity from starvation a century before.

“Yeah, well who knew a doomsday cult would decide there were too many people and bioengineer a virus of their own that targeted the NitroBac?” Silas, the other civilian, added. “A few mass dispersals in the right water sources and just like that – no more fertilizing bacteria and no remaining infrastructure to make old-school synthetic nitrogen anymore. In retrospect, we probably should’ve left a few traditional nitrogen plants running as backups but c’est la vie!”

The plane bounced on the dirt runway as it landed and then rolled to a stop. Theo and his compatriots grabbed their bags and deplaned, heading for a collection of newly-erected tents along the southern end of the runway. Theo noticed the batteries of air and space defense systems set up around the airfield. Forests of antennas and satellite dishes were growing rapidly as technicians ran cables and power lines from command tents and generators.

At the command tent, they met Col Gonzalez from the Chilean Army.

“Welcome to Chile! Hope you brought a shovel!”, he said with a laugh, but Theo noted the signs of strain around his eyes. Suddenly finding yourself the center of a worldwide struggle for the raw material to fend off mass starvation was bound to stress anyone and having the combined Russian and Chinese fleets heading for your coast at top speed surely only made things worse.

They followed the colonel into the tent and, after grabbing coffee and some Chilean conejitos, they headed through a flap in the back and into the shipping container that had been quickly outfitted as a temporary high-security vault. The door closed by them with a gentle hiss as it sealed.

“So, why you three?” Colonel Gonzalez asked the new arrivals.

“I’m the Space Force liaison for Phoebe and Silas. They’re the technical experts here to coordinate the landings.”
“Landings?”

“Yes. We have a small fleet of SpaceX Starships currently being loaded with a set of autonomous mining equipment. It’ll be flown down here to begin nitrate extraction tomorrow night. Unfortunately, the Chilean nitrate industry was already on rocky ground,” The colonel narrowed his eyes at the pun but said nothing, “but NitroBac finished it off. The local industry’s mining vehicles and facilities haven’t been maintained in half a decade and what wasn’t sold has been stripped for parts by locals. We’re going to fly in a complete set of Caterpillar’s latest autonomous mining system. In fact, this particular set of vehicles and equipment were designed to be sent to Mars to support the autonomous base construction there so, by the grace of God, they’ve been designed to fit in the Starship faring and meet flight requirements. The good folks out in Peoria are working overtime to retrofit everything they can lay their hands on for the next round of flights down here but that’ll take a couple months. Once the first flights of Starships land, those diggers

and ore processors will be the only friendly heavy mining equipment we’ll have here until August.

Our president has decided that the first priority is showing our citizens and our allies that we can successfully extract the nitrates from the Atacama, despite the threats from Russia, China, and their allies here in South America. As we speak, the Ambassador is informing the Chilean President that the U.S. will put them first in-line, even above U.S. citizens, for American-grown food fertilized with Chilean nitrates.”
Colonel Gonzales closed his eyes for a moment and tried to imagine a squadron of 50-meter-tall spaceships flying into the desert to drop off robotic mining equipment while the Chinese threatened to shoot them down with hypersonic missiles, all because some psychopaths decided there was… too much food?

“And there’s no hope for a diplomatic solution?” he asked.

“Unfortunately, not much. The chances of each country’s population rioting if there’s no food is too high to work out any sort of equitable sharing agreement, so it’s devolved into a race for the resources. Under the circumstances, leadership has decided the best course is to use the nitrates from here in the best farmland in the world to grow as much as we can as fast as we can before things get too ugly. But even if we assume we can get enough nitrates back to the States, we’re still looking at mass hunger within the next six to nine months, depending on the specific crops. The hope is that these rocks will be enough to keep society together just long enough to work out a new solution to the NitroBac virus or at least rebuild some of the old plants,” Theo said.
“Ah, mass starvation does have a unique way of focusing the public mind. I remember the news from Africa following the destruction of the Ukrainian grain ports… who knew that the one tactical nuke used during that conflict would be used to spite the rest of the rest of the world?” the Colonel said. “As to the matter at hand, why Starships? Why not use your Navy to ship the mining equipment down here?”

“Tensions are too high at the moment to risk a naval engagement with

either the Atlantic or Pacific Chinese fleets. The Starships will only need a few minutes to get down here from the launch sites in Vandenburg and Patrick Space Force Bases. We're confident we'll be able to clear enough of a path through the Chinese long-loiter UAVs and hypersonics to sneak the Starships in."

"I see… Well, let's get to it!"

With that, the meeting adjourned. The Colonel's staff showed Theo and his companions their quarters and then Phoebe and Silas began directing the setup of the equipment they'd brought with them. Theo toured the airfield to assess the state of the different defense and communication systems then returned to the vault to make a report back to his superiors at U.S. Space Command. The remoteness of the Atacama Desert, the driest place on earth, limited the options available for advanced encrypted communications so Theo had brought an old-school Quantum Key Distribution, or "QKD", device. Not as secure as the current generation of quantum teleportation systems (the result of Eisenstein's classic "spooky action at a distance" effect), the QKD worked well enough over the expeditionary satcom links he had at the moment.

After relaying the current status of preparations, he left the vault and joined Phoebe and Silas for dinner at the dining tent.

"How are we looking for tomorrow?" he asked.

"Silas and I got everything sorted out with the techs and were on track with the timeline.

Thankfully everything's going smoothly so far. The comm satellites are in position and the defensive satellites are moving into position now. We've got the lasercom terminal up so we should have line of sight comms with them for at least a while once the jamming gets serious." Phoebe said.

The next 24 hours passed in a blur of activity. Theo received word that the Cyber Force operators were in place on the adversary networks, ready to cause confusion and create blind spots in their operating pictures.

At last, all was ready and Theo received the "Go" order.

"Alright, time to let the kids go play on their own!" He said to Phoebe and Silas.

With a few taps, Phoebe and Silas placed the satellites above them into full-autonomous mode in anticipation of intense jamming and other interference.

"Looks like we were just in time," Silas said. "Our comm bird is getting blasted pretty good on its main channel."

Up in space the satellites, unleashed from their human operators, began a series of moves and counter-moves to block, jam, and interfere with the Chinese and Russian satellites, as their robotic adversaries did likewise.

Meanwhile, at the Vandenberg and Patrick Space Force Bases, the Starships, loaded with the mining machines, roared off their launch pads. All along the flight paths to the Atacama. Navy vessels stood ready with their Aegis systems primed to intercept any incoming threats. As soon as the rockets left US airspace, the missile warning satellite constellation detected multiple launches from long-range loitering Chinese drones from over both the Atlantic and Pacific. Alerts screamed on screens across the fleet as the air-to-air missiles sped towards the Starships. Interceptor missiles shot off of destroyers all along both coasts of Central America. As the first Chinese hypersonic missile neared one of the Starships over the Caribbean, a powerful laser sliced out of a cloud bank and blasted the missile's sensing unit.

The Angola-based Chinese drone pilots scrambled to maneuver the other hypersonics as the Strategic Support Forces retasked their space assets to try and find the U.S. Air Force's stealth dirigible as it shot down another hypersonic.

The Starships separated from their boosters and began their descents towards the desert landing zones. As the second starship crossed over Bolivia, a streak of light tore upwards. The railgun round slammed into the faring, tearing a hole in the side and shearing off the starboard fin. The inrush of air and loss of stabilization caused the Starship to rip itself apart and a hail of rocket and mining parts rained down across the Bolivian mountains. As soon as the railgun disclosed its location with its first shot, the AI-driven sensing network derived a fix on its location and passed it to an American Foreign Legion F-35 which instantly fired a hypersonic air-to-surface missile. An evolved version of the venerable HARM (Highspeed Anti-Radiation Missile) used by the Wild Weasel squadrons since the Vietnam War, the missile struck the railgun site like a bolt of lightning.

The other starships made the passage with only one other intercepted by a hypersonic missile.

"5 for 7, could've been worse." Theo said, as the flares of the five surviving Starships signaled their descent.

As the ground crews rushed to unload the mining equipment from the Starships, a sudden flash of shooting stars in the sky far above shone out as debris from a satellite-on-satellite engagement re-entered the atmosphere.

"Well, looks like someone's being involuntarily de-orbited." Phoebe said.
"One of ours?" Theo asked.

"No telling at the moment, we should get word soon enough."

Theo nodded and looked towards the row of excavators, ore carriers,

FUTURE FICTION

and drillers emerging from the holds. He thought of the billions of people depending on the nitrates that these machines would need to mine and said a silent prayer for their success in the trials ahead.

The End

Future Fiction is a new endeavor spearheaded by USSF culture leaders in partnership with SFA Magazine. Each issue will include at least one short story written by a Guardian, exhibitng the impact of human creativity on the USSF's game theory and planning operations as well as challenging Guardians to imagineer the future!

Write for Us!

SFA Magazine is always looking for compelling content to drive the discussion around the future of the national space enterprise! Our standards are high, our guidelines are thorough, and our quarterly themes are unique and compelling.

Reach out to our Editor-in-Chief, Felicia S. C. Gooden to grab details on the theme for the next issue and a copy of our editiorial guidelines!

REACH OUT NOW!

SPACE FORCE AND STATE OF TEXAS ADVANCING RESEARCH AND EDUCATION

Brian Creighton
Contributor and SFA Director of Staff

"If you know how to build something inherently you know how to break something. I think that is what we are going to see in the future, quite frankly. People are going to have capabilities that we don't want them to have and one of the ways to fight it is to basically go disable it"

Dr. Nancy Currie-Gregg, Director of the Texas A&M Space Institute, Astronaut.

The United States Space Force and the State of Texas have recently provided a combined $400 million in funding for the advancement of space operations and workforce development. The newly created Texas Space Commission has directed Texas A&M University to construct a $200 million space institute next to the NASA Johnson Space Center in Houston and appropriated another $150 million to promote workforce training and space-based emerging technologies. On top of that, the Space Force tapped Texas A&M and the University of Cincinnati to

receive a combined $50 million for applied research in the areas of In-Space Operations, which includes Space Access, Mobility, and Logistics.

Dr. Currie-Gregg is the new Director of the Texas A&M Space Institute and a former astronaut. Her NASA Space Shuttle missions involved assembly of the Space Station and repair work on the Hubble telescope. Dr. Currie-Gregg is very familiar with in-space assembly and what it will require to educate and develop practical skills for our current and future space industry workforce. I interviewed her in January about the possible design and implementation of the new facility.

The Texas A&M team led by Dr. Currie-Gregg began with meetings of academic, government, and industry stakeholders to determine their inputs on the design and construction of the Texas Space Institute. The planned layout of the institute to be built on the NASA Johnson Space Center leased land will be "larger than two football fields" (that is how we measure things in Texas). One large bay will have a lunar scape and another large bay will have a Mars scape. These will be enclosed and allow for scale testing. The goal is integrated operations in a relevant environment. In-between the bays will be "modular garages" that will allow for research including planetary sample analysis or a space-based hospital. The three main thrusts are engineering research/development, medical/health, and science.

In regard to how this facility can benefit the Space Force, Dr. Currie-Gregg's vision for the facility is government, industry, and academia to work in collaboration to achieve at-scale testing and certification of emerging technologies. She also anticipates programs offered at the facility for mini certifications on systems or programs or simply

training for bringing personnel up to speed on new technology. The institute can also serve as a location to transition the established workforce from past programs to future generation programs and thus develop additional skill sets. Additive manufacturing and model-based systems engineering are examples she gave of possible avenues of study and training at the institute.

These concepts align with recent remarks Lt. General David Miller shared during an SFA Space Warfighter Talk. He said the Space Force needs "live virtual and constructive environments that our Guardians and Space Operations Command can access in order to generate combat-ready space power". He added, "I don't want to be in a position where we are asking Guardians to do work that automation, or where appropriate, artificial intelligence can be integrated into our tactical operational units to free up Guardians to focus on thinking about the threat and developing new tactics and training models to get after that threat." He continued, "we've got to continue to have the best technology across the board. So, whether that mission set is how we're going to sense from space or the ground, whether that mission set is how we are going to provide surveillance and, ultimately, targeting advanced threats, or whether that is how we are going to shorten kill chains and focus on precision." Additionally, he emphasizes, "I'm not interested in 10-year acquisition programs...my focus is the next 3 years".

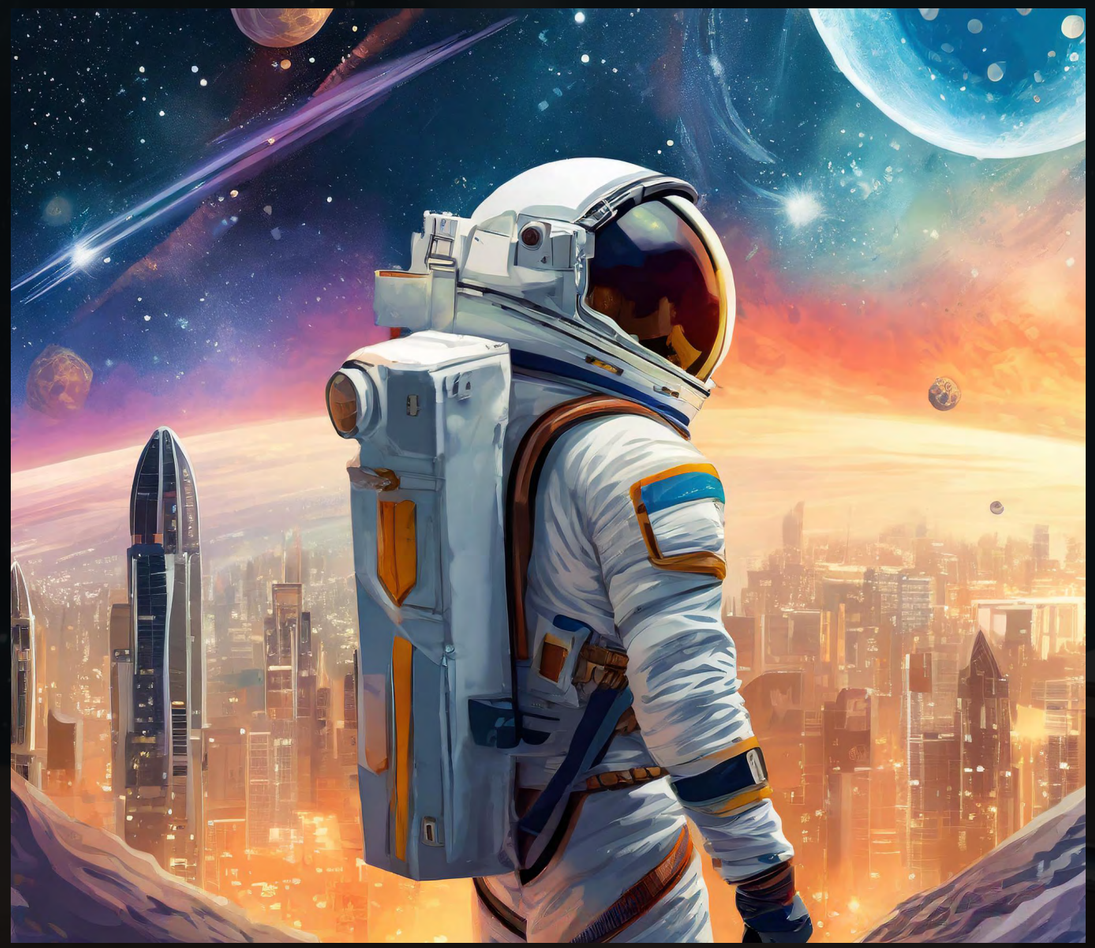
The Space Force is putting real money behind comments like Lt General Miller's. As mentioned earlier, in January, the Space Force announced $50 million in funding for Texas A&M and the University of Cincinnati through the Space Strategic Technology Institute, or SSTI2, to facilitate applied

research in the areas of in-space operations, which includes Space Access, Mobility, and Logistics, or SAML. The announcement details the focus areas will be on the procurement of technologies relating to spaceflight experimentation and space-related signal, energy, and transportation technologies. The selected proposals include researching robotic servicing and associated modeling and simulation, developing testbeds, as well as CubeSat berthing and refueling technologies, developing constructive operations, large-scale in-space assembly, and debris mitigation.

When asked about how these two initiatives could help the Space Force Dr. Currie-Gregg said, "If you know how to build something inherently you know how to break something. I think that is what we are going to see in the future, quite frankly. People are going to have capabilities that we don't want them to have and one of the ways to fight it is to basically go disable it". This combined funding is meeting the need for better workforce development in space operations for government, commercial, and education.

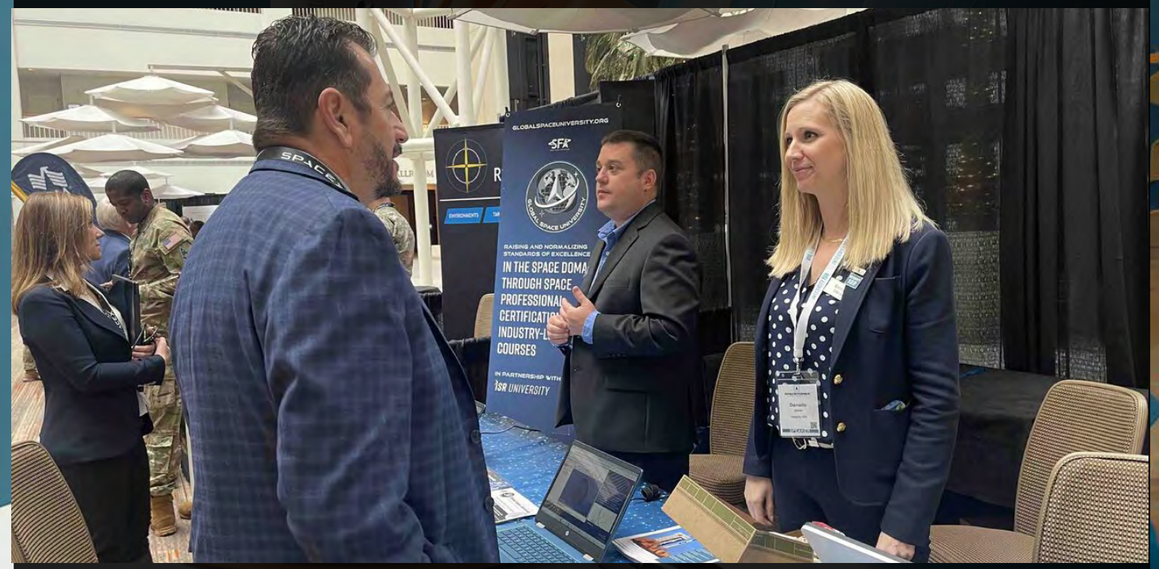
A focus of this edition of the SFA Magazine is the "A" in STEAM (science, technology, engineering, arts, math). At first thought there doesn't seem to be much in the discussion related to the arts when talking about the development of the space industry workforce or Guardians. However, when asked about this specifically Dr. Currie-Gregg highlights the obvious fact that people will be the ones interacting with the emerging technologies and training programs. The performance of the human will be enhanced or degraded in significant ways based on the art of design. The arts have much to contribute in this area and have established a history of contributing to the advancement of human

interface with technology. Examples abound in modern life: cars, cell phones, airplane flight decks, etc. The involvement of the arts in the advancement of space technology will be critical to the efficiency and effectiveness of its use.



WHEN WOMEN LEAD THE WAY: HOW DANIELLE STORAN SET THE STANDARD FOR GLOBAL SPACE EDUCATION AND USSF WORKFORCE DEVELOPMENT

Felicia S. C. Gooden
SFA Magazine and Newsletter Editor



Two Women in Space Pioneers connected at the inaugural Spacepower Conference in December 2023 and discussed the groundbreaking work Global Space University has done to set a new standard in space education. An accessible and constructive space certification program is exactly what the space industry and USSF need to keep pace with strategic competition in an ever more dangerous domain. Defense-minded leaders can bridge the gap between geopolitics, national security, and commercial space.

Danielle Storan, Treasurer/CFO of Space Force Association (SFA) and Executive Director of Global Space University (GSU) is a pioneering Woman in Space who takes pride in leading space education innovation. At the 2023 inaugural Spacepower Conference, General Chance Saltzman made it clear that a top priority for the USSF is supporting the cultivation of education programs for space industry and Space Force workforce development. Storan and the SFA Education Committee are leading the way in setting that innovative standard by providing access to top-tier space certifications to prepare anyone at any level of their professional journey for work in the space industry and collaboration with the USSF.

GSU's programs keep in mind that the Space Force is not only Guardians but also civilians and contractors. Civilians and contractors do not have a structured home for professional development outside of the Space Force currently. GSU ensures that those who can step up and lead the Space Force as Guardian complements have a way to gain relevant education to enhance their experience.

According to Storan, "The next war will be fought in space. GSU certification programs go after the same desired learning objectives as the National Security Space Institute (NSSI) and the 319th. Our programs are at the undergraduate and graduate levels, offering graduates the same level of knowledge and expertise as those undergoing Space Force training, and that is where we have been very successful." GSU has graduated over 300 students since launching the program. Now, the Space Force knows exactly what to expect from a civilian or contractor with GSU on their resume. With a Certified Space Professional (CSP) credential, hiring managers know that talent has the baseline knowledge required to operate in the space domain.

The certification is similar to a PMP or CISSP and is a complement to academic programs, offering transferable credits through the University of San Diego. Most master's programs don't teach space warfighting – traditional programs mostly focus on the commercial side.

WOMEN IN SPACE

GSU inserts its secret sauce by infusing the national security and military side of space applications. There are no prerequisites for beginner's courses, but some of the high-level courses require successful completion of an introductory course.

An interesting aspect of GSU's program is that anyone can register and begin their journey into the space industry or just gain knowledge for themselves. "We had people from Mitsubishi come and take courses," Storan quipped. "In many cases, car manufacturers have satellite capabilities in their vehicles on the engineering side. I can't speak for exactly what Mitsubishi was looking to get after – I don't want to speak for them. But space is involved in every aspect of life. So, we've seen people from gamers to traditional space defense industry partners to people who are space geeks that want to learn a little bit more."

As far as timing, Global Space University courses can be purchased individually and completed in eight weeks. There is a weekly virtual session with a live instructor, and most courses are completed after hours when students are off from their day jobs. This helps accommodate a route to broadening career paths. Classes are typically held once per quarter, allowing foreign partners to participate, and accommodating many students. The instructor meeting is flexible and can take place at whatever time is best for the student – in person or virtually, no matter one's location on Earth. There is also an option to complete the course in eight days like a bootcamp. Storan worked with a team of space professionals – PhDs, rocket scientists, and more who have all spent their entire careers in the space industry – to build GSU. Her strong network of space professionals developed the GSU curriculum.

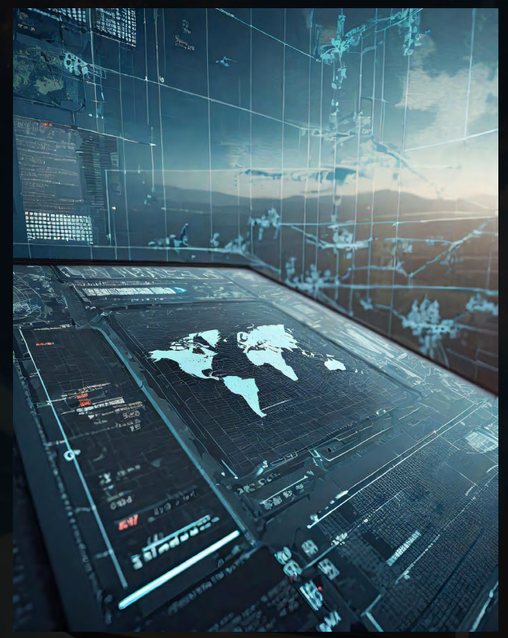
When asked why she started GSU, Storan replied, "We started teaching space ISR to the Air Force back when there was no Space Force. As we transitioned to the Space Force, I started meeting with my counterparts who were newly minted Guardians and asked what their biggest pain points were, I invariably heard, 'Well, we're inheriting legacy Air Force civilians or we're inheriting contractor personnel

that don't understand space. And in the acquisitions community, you're used to buying F-16s. It's very different from buying satellites.'

I decided that's a problem I could get after. So, I called SFA founder, Bill Woolf, and told him I wanted to create a space professional certification program under SFA so that the government knows exactly who they're getting when they see our certification tag after their name. Bill was enthusiastic about the idea!" From that moment on, Space Force talent acquisition challenges were history. Storan and Woolf partnered to create the Space Professional Certification Program currently in operation.

Storan began her career in the press with a lively background in international affairs and Middle East studies. After spending time in the geopolitical arena,, Storan felt called to get back to her "defense roots" and took a job managing international affairs for the Secretary of the Air Force for many years. After taking time off to raise her kids, she started consulting and then decided to start her own defense company.

"I thought I could do it better and I think we've been doing pretty well so far," Storan boasted. "I put a premium on hiring the best subject matter experts to collaborate with, ones that embrace innovation and training and ideas. Everybody on the team brings a unique perspective, and that collaboration is how GSU training ideas and curricula have become top-notch!"



CALL FOR VOLUNTEERS!

by Diane Ward

The SFA is a success because of its formidable volunteers. Our nonprofit organization is appreciative of every volunteer as our combined expertise is a quilt of excellence and dedication.

If you would like to be part of the Space Force Association's volunteer network, please email Diane Ward, Director of Volunteer Support at Diane.Ward@ussfa.org to discuss how your unique skills can help propel SFA forward. We need volunteers with all types of skills: contact us today to begin a rewarding volunteer opportunity!

SFA AWARDS PROGRAM RECOGNIZES EXCELLENCE IN MILITARY SPACE OPERATIONS

Rhonda Sheya
SFA VP of Public Relations

There are two SFA Awards programs. The Spacepower Awards, celebrating prominent players in the space industry, and the SFA Annual Awards, celebrating Guardians delivering operational excellence for the USSF. SFA is honored to highlight the impeccable, selfless service of Guardians of excellence with the SFA 2023 Annual Awards.

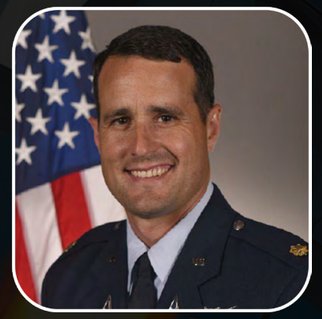
In February, the Space Force Association (SFA) proudly announced the recipients of the 2023 SFA Awards, honoring outstanding individuals and teams in military space operations. The SFA Awards program is designed to recognize the "best of the best" in the field, highlighting the exceptional contributions made by individuals and teams within the United States Space Force.

"The Space Force Association is extremely proud of our Guardians' hard work, innovation, and dedication. Tireless hours are spent at every level across the Department of Defense to maintain Space Superiority and educate, build, plan, and integrate space warfighting into the United States military. We congratulate all our winners and look forward to next year's awards season." SFA Awards Chairman Thomas Colvin, Colonel USSF, Retired quipped.

Each recipient has demonstrated exemplary performance, leadership, and dedication in their respective roles, contributing to advancing military space capabilities and the mission of the United States Space Force.

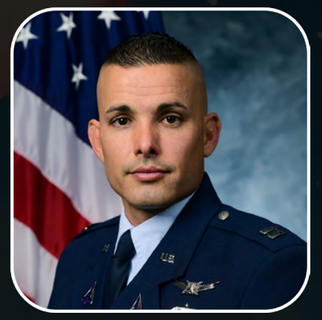
"We are thrilled to recognize the exceptional achievements of these individuals and teams in advancing military space operations," said SFA President and Founder Bill Woolf, Colonel USAF, Retired. "Their dedication, innovation, and leadership have been instrumental in shaping the future of space capabilities and ensuring the success of the Space Force mission."

The 2023 SFA Award recipients are as follows:



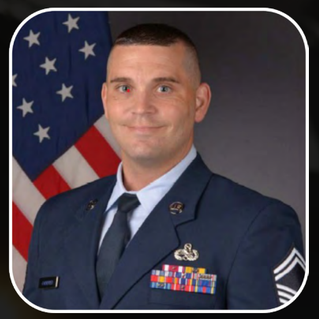
Senior Officer:

Major Jason A. Altenhofen, SSC - Director of Operations, Space Safari Program Office



Junior Officer:

Captain Nicholas J. Ruiz, STARCOM - Chief of Executive Actions, Space Training and Readiness Command HQ

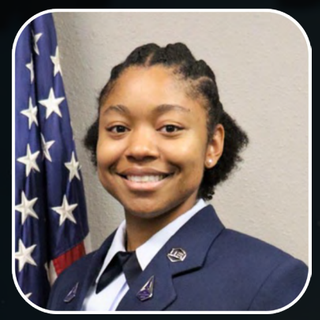


Senior Non-Commissioned Officer:

SMSgt Keith A. Carpenter, SSC - Senior Enlisted Leader, 5th Space Launch Squadron of Operations, Space Safari Program Office

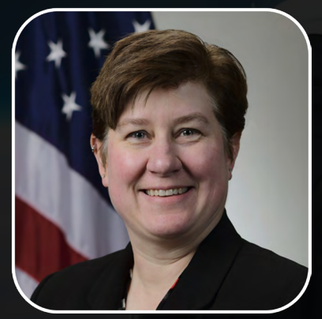
Non-Commissioned Officer:

TSgt Andrew J. White, SPOC - Flight Chief of Mobile Operations, 4th Space Operations Squadron



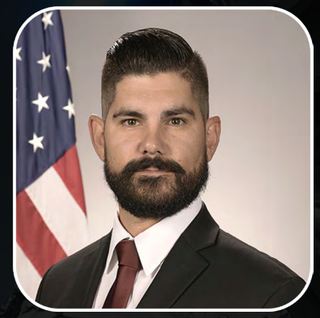
Junior Enlisted:

SPC3 Taylor D. Morgan, SPOC - Operations Analyst, 71st ISR Detachment 3



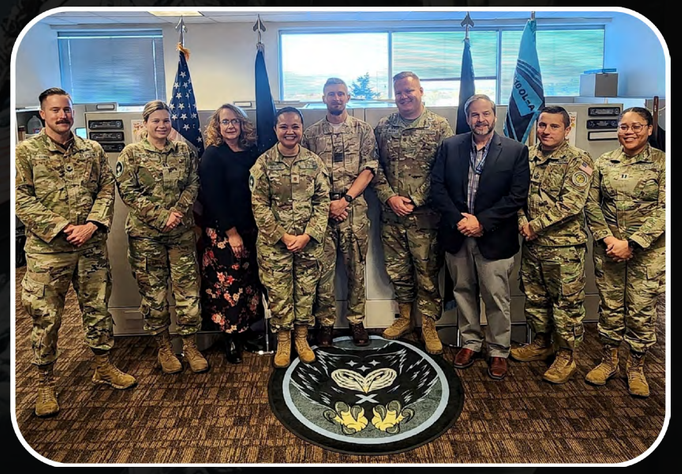
Senior Civilian:

Mrs. Jessie L. Charlton, SPOC - Course Management Director, 8th Combat Training Squadron, Space Delta 8



Mid-Tier Civilian:

Mr. Alexander V. Smalldon, SPOC - Budget Analyst and Resource Advisor, 21st Security Forces Squadron



Team:

Space Delta 10, OL-A, STARCOM - Development and Publication of Service Doctrine

SFA is honored to celebrate these brave and innovative Guardians, and we look forward to celebrating more later this year!

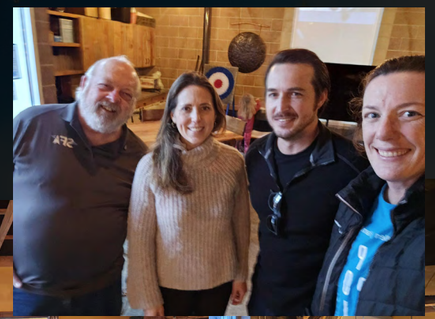
Reach out to awardsubmissions@ussfa.org to learn more about the SFA Awards program. Feel free to ask questions or nominate a Guardian near you!

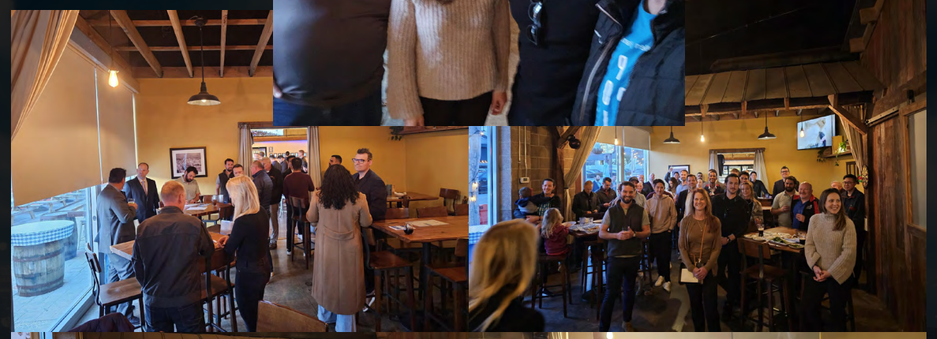
SFA HIGHLIGHTS

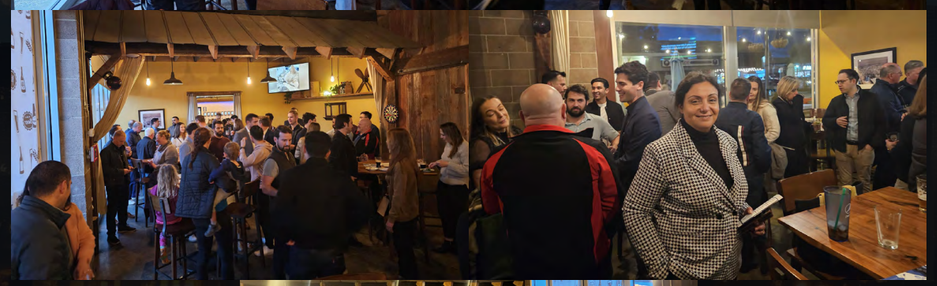
CELEBRATING SPACE IN THE CITY OF ANGELS

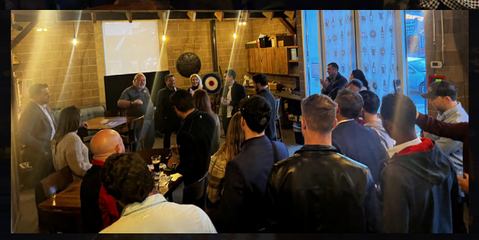
SFA Staff

In February, SFA Los Angeles held a chapter social where SFA members, Guardians, industry reps, and space enthusiasts gathered in the spirit of networking. The event was a success, memories were made, and connections became alight!









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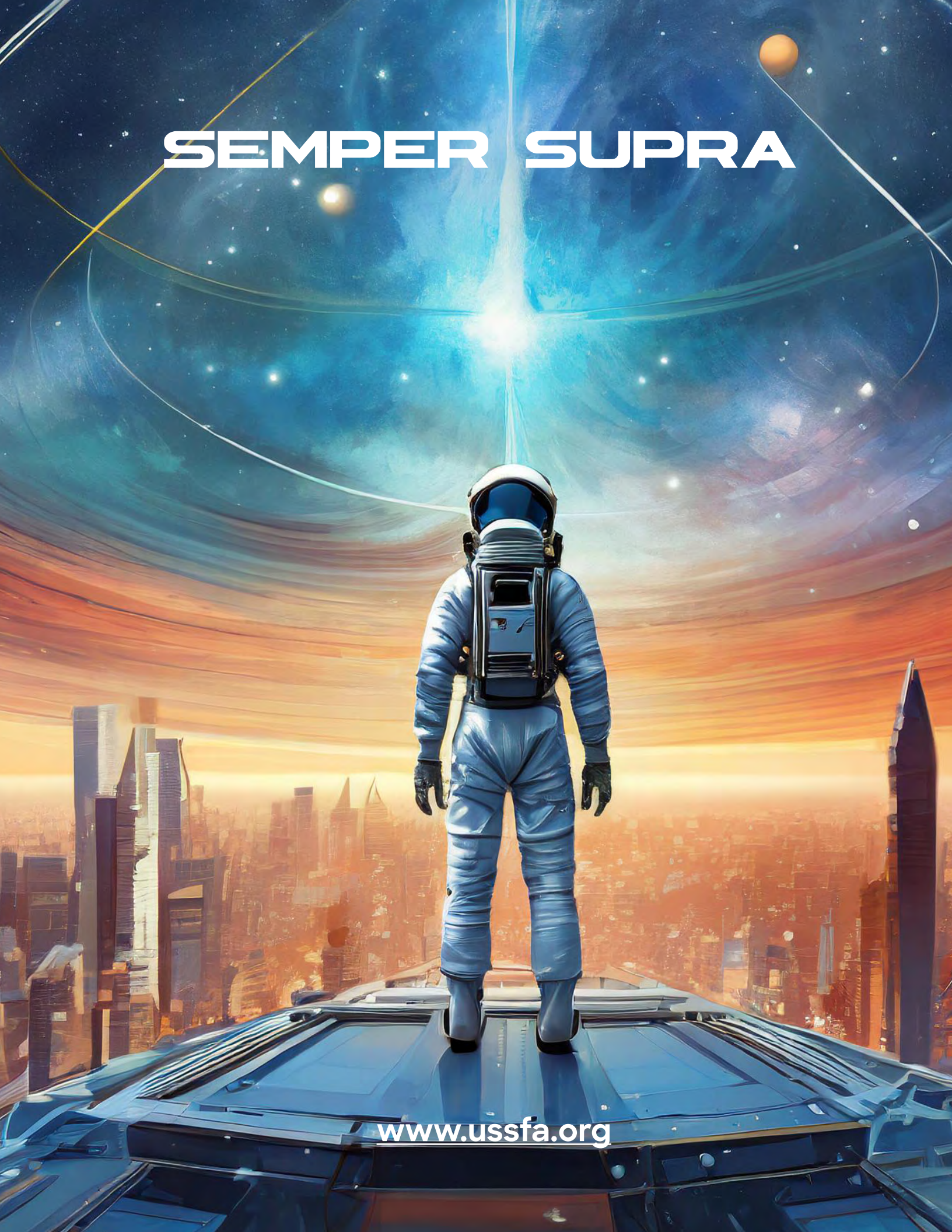
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