



# USSPACECOM

FROM THE ULTIMATE HIGH GROUND  
TO THE LAST TACTICAL MILE







**NEVER A DAY  
WITHOUT SPACE**









# FROM THE COMMANDER GEN JAMES DICKINSON

Welcome to the inaugural edition of our *Annual Report*, a guide to United States Space Command, published to celebrate the accomplishments of our nearly 18,000 Headquarters, Functional Component and Service Component warriors who make up the nation's 11th Combatant Command.

Since establishing the new United States Space Command in August 2019, we worked tirelessly to build the command to compete and win in the face of increasingly aggressive and sophisticated competitors. Along with our global allies and partners, we continue to champion and promote the responsible

and safe use of space, all while continuing to hone the space combat power needed to ensure we can hold bad actors accountable, if necessary.

This year, we celebrate our second birthday having reached our full complement of service components and subordinate units, welcoming more international



liaison officers to our headquarters, signing our 100th space situational awareness data sharing agreement and numerous additional accomplishments. These achievements enabled me to declare initial operational capability at my headquarters with the confidence our space warfighters are ready to protect and defend this precious and critical domain.

With the USSPACECOM headquarter's milestone behind us, we now begin the march towards full operational capability—all while continuing to prepare for the war not yet fought in an area of responsibility which is increasingly competitive, congested and contested.

I am proud and honored to lead and serve alongside the professionals of U.S. Space Command — a team of warfighters who outthink and outmaneuver our competitors, delivering space combat power from the ultimate high ground to the last tactical mile.

Together, along with our allies and partners, we will ensure there is never a day without space.

***Gen. James Dickinson***  
***Commander, U.S. Space Command***



# CONTENTS

## FEATURES

### 8 U.S. SPACE COMMAND OVERVIEW

For over half a century, space power has provided the United States with a strategic advantage. Today, USSC resides at the center of this critical service.



### 10 INITIAL OPERATIONAL CAPABILITY

Gen. James Dickinson declared the nation's 11th combatant command has achieved initial operational capability, Aug. 24, 2021.



### 12 BY THE NUMBERS

From thousands of pieces of orbital debris to hundreds of service members working in our command, USSC examines the stats behind the space domain.



### 16 MILESTONES

As the nation's newest combatant command, USSPACECOM has never slowed down since our inception two years ago. The challenges keep rolling in as we compete to win in space.



### 18 STARS OF SPACE COMMAND

United States Space Command looks within its own ranks to recognize the service members who rise above the fold. We celebrate a whole new level of excellence.



## COMMANDER'S KEY TASKS

### 22 UNDERSTANDING THE COMPETITION

 Spacecom Commander discusses space domain awareness at U.S. Senate hearing.

### 24 BUILDING THE COMMAND TO COMPETE AND WIN

 USSPACECOM Releases Commander's Strategic Vision.

### 26 MAINTAINING KEY RELATIONSHIPS

 Global Lightning exercise tests multi-domain space capabilities.

### 28 MAINTAINING DIGITAL SUPERIORITY

 Air National Guard unit provides essential secure satellite communications.

### 30 INTEGRATING COMMERCIAL & INTER AGENCY ORGANIZATIONS

 JTF-SD, NSDC foundational to protecting the space domain.



## SUBORDINATE COMMANDS

32 COMBINED FORCE SPACE COMPONENT COMMAND



34 JOINT TASK FORCE-SPACE DEFENSE



## COMPONENT COMMANDS

36 U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND



38 NAVY SPACE COMMAND



40 MARINE FORCES SPACE COMMAND



42 FIRST AIR FORCE



44 SPACE OPERATIONS COMMAND



**UNITED STATES SPACE COMMAND**  
NEVER A DAY WITHOUT SPACE



# NEVER A DAY WITHOUT SPACE

## FROM THE ULTIMATE HIGH GROUND TO THE LAST TACTICAL MILE

For over half a century, space power has provided the United States with an important strategic advantage. Today, space enables nearly every facet of society and is central to our way of life. From commerce to meteorology to global communications, society not only relies on space capabilities, it expects the services they provide to always be present. Space enables our national security to preserve our way of life. From protecting the homeland and fighting our nation's wars alongside allies and partners, to providing humanitarian assistance, space makes the achievements of America's military possible.

The establishment of United States Space Command as the 11th combatant command demonstrates the critical importance America places on space. As the environment changes to reflect shifts in the geopolitical

landscape, advances in technology and new threats, space will remain a critical component of our way of life and to our national security. Our space truths are principles that reflect this enduring relationship. They will guide our military space operations through an increasingly complex environment and into an uncertain future.

Our competitors have demonstrated their determination to hold our space capabilities at risk. Therefore, we will always defend our national interests, deter aggression and support our allies and partners. Should deterrence fail, the combat power generated by our Combined and Joint Force will enable us to win.

Our competitors are not only challenging national security and prosperity in cyberspace, on land, at





## THE AMERICAN WAY OF LIFE IS FUELED BY SPACE

sea and in the air; they have turned space, a once peaceful environment, into a warfighting domain. By developing, testing and deploying counter-space capabilities and evolving their military doctrines to extend into space, our competitors seek to prevent our unfettered access to space and deny our freedom to operate in space.

Space is no longer a sanctuary. Technological advances, changes in strategic guidance and new security challenges require United States Space Command to innovate and adapt to ensure that space warfighters are prepared to accomplish future missions in, from, and to space. United States Space Command will protect and defend the American people and ensure there is never a day without space.

### SPACE TRUTHS

- Space is a vital interest that is integral to the American way of life and national security.
- Space superiority enables the Joint Force to rapidly transition from competition to conflict and prevail in a global, all-domain fight.
- Space warfighters generate the combat power to win in space.
- Space provides the warfighter a combat advantage from the ultimate high ground to the last tactical mile.



# U.S. SPACE COMMAND

## DECLARES INITIAL OPERATIONAL CAPABILITY

PETERSON SPACE FORCE BASE, Colo. – U.S. Space Command commander Army Gen. James Dickinson declared the nation's 11th combatant command has achieved initial operational capability, Aug. 24, 2021.

"The rich space operations legacy of U.S. Strategic Command and its largest component, Air Force Space Command, meant that when our combatant command was established two years ago, we weren't starting on the launch pad," Dickinson said. "However, we are a very different command today at IOC then we were at stand-up in 2019—having matured and grown into a warfighting force, prepared to address threats from competition to conflict in space, while also protecting and defending our interests in this vast and complex domain."

During the past two years, U.S. Space Command accomplished multiple milestones on the path to IOC with a focus on building the command to compete and win. "Simply put — U.S. Space Command is ready to deter conflict, and if necessary, defeat aggression and, along with allies and partners, defend our vital interests in the space domain," Dickinson said.

### MILESTONES

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- Received assigned components from five military services to USSPACECOM
- Stood-up two functional components (Combined Forces Space Component Command and Joint Task Force—Space Defense) to deliver combat relevant space capabilities to the Joint fight, and to conduct space superiority operations to deter conflict, defend U.S. and allied interests, and defeat adversaries throughout the continuum of conflict
- Established and built U.S. Space Command headquarters command and control capabilities with 600 space professionals, and growing
- Published the Command Vision and Strategy documents, which provides the framework for the Command's mission execution
- Signed first USSC operations order under Operation Olympic Defender
- Executed USSPACECOM's role in multiple national level Tier 1 war games, war fighting rehearsals, and exercises to test and refine space warfighting command and control relationships
- Established USSPACECOM Tier 1 exercises – Space Thunder, Lightning and Challenge to align with other combatant command exercises
- Signed more than 100 space operations-related data sharing agreements with international, intergovernmental and commercial partners





The command's focus now shifts to achieving full operational capability. Looking ahead, FOC will require the headquarters fully staffed, a permanent headquarters, an approved OPLAN and updated campaign plan.

Also, USSPACECOM will look to define criteria for the Tenets of Responsible Behaviors for military operations in space, in accordance with the recently released SECDEF memo.\*

"In the same way our command has matured and grown during the last two years, so has the threat," said U.S. Space Force Lt. Gen. John Shaw, U.S. Space Command deputy commander. "The Department of Defense must lead by example--committing to promote responsible behavior for military space operations in order to assure the space domain remains secure, stable, sustainable and accessible."

Dickinson explained that developing a shared understanding among space-faring nations of what

constitutes safe and responsible military space operations can contribute to the U.S. whole of government approach to creating a more stable and predictable space environment, reducing the risk of miscommunication and misinterpretation.

"These tenets represent a first step in ensuring the ability of all space-faring nations to operate freely and openly in space," he said.

U.S. Space Command Senior Enlisted Leader Master Gunnery Sergeant Scott Stalker attributed achieving IOC to the people of U.S. Space Command, and its service and functional components.

"One of the biggest differences between the old space command and the new space command is the warfighting ethos of our people," Stalker said. "The baseline capabilities of our people make us strong—but our cultural commitment to a diverse and joint approach to USSPACECOM operations make us more lethal and effective warfighters. "

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*\*A recently released memo from Secretary of Defense Lloyd Austin charged USSPACECOM with developing and coordinating guidance regarding five tenets of responsible military behavior in space. The tenets of responsible behavior include:*

- Operating in, from, to, and through space with due regard to others and in a professional manner
- Limiting the generation of long-lived debris
- Avoiding the creation of harmful interference
- Maintaining safe separation and trajectory
- Communicating and making notifications to enhance the safety and stability of the domain

# BY THE NUMBERS: **THE CONTEXT**

In 1957, Russia's tiny Sputnik satellite was the one and only human-made object gliding across low Earth orbit. Today, our way of life is inextricably tied to space-based capabilities. However, the space domain, which represents U.S. Space Command's geographic area of responsibility, is no longer benign and is increasingly competitive, congested and contested.

## COMPETITIVE

16

Nations are considered active space-faring nations

32

Nations have sent astronauts into space

7

Nations have cislunar capability

8

Nations have orbital launch capabilities

7

Nations have sent probes to Mars



## CONTESTED

**97%**

Of adversary satellites are estimated to be dual-use capable

**9**

Known demonstrations of counter space capabilities (six Russian and three Chinese)

**4**

Known incidents of space capabilities being compromised through cyber attack.

## CONGESTED

**4,100**

Satellites in low Earth orbit. This number is increasing quickly.

**402**

Satellites in geosynchronous orbit

**32,116**

Objects tracked in space by U.S. and allies



## STRUCTURAL

11

U.S. Space Command established as the 11th U.S. Combatant Command (2019)

6

U.S. Space Force established as the sixth branch of the military (2019)

3

Allies have stood up their own Space Commands: United Kingdom, France and Germany, and more are coming



## FUNCTIONAL

5

Components providing U.S. Space Command service-based warfighting capability

2

Functional components assigned to U.S. Space Command



750

Service members and DoD civilians assigned to the United States Space Command Headquarters



# BY THE NUMBERS: OUR RESPONSE

Given the growing risk to our ability to operate freely in the space domain, the U.S. and our allies have responded structurally, functionally and culturally in a joint, combined and partnered approach to space operations.

2

Intergovernmental organizations with sharing agreements

26

Countries with sharing agreements with U.S. Space Command

26

Exercises and war games to build partnerships, interoperability and joint war fighting ethos

5

Commander's key tasks tied to Unified Command Plan and National Security

92

Commercial partners with sharing agreements



CULTURAL



# MILESTONES

As the nation's newest combatant command, United States Space Command has never slowed down since our inception two years ago. We have faced a global pandemic, built international partnerships and taken on the challenges of the modern space era, all while building our command to compete and win in space.



Space Operations Center  
activated and designated Space  
Force component to USSC

SMDC designated Army  
component to USSC



Russia conducts anti-satellite missile test



USSC Commander releases strategic vision



2020

2021

AUG

SEPT

OCT

NOV

DEC

JAN

FEB



MARFORSACE activated  
and designated Marine  
component to USSC



NAVSPACE designated  
Navy component to USSC



USSC Commander discusses adversary threats in space with the press



# NEVER A DAY WITHOUT SPACE

## USSC Congressional Testimony

USSC participates in  
Global Lightning 2021



USSC Commander bilateral meetings with France and U.K.



MAR

APRIL

MAY

JUN

JUL

AUG



First Air Force designated Air  
Force component to USSC



USSC Commander bilateral meetings with Japan, South Korea



USSC signs 100th commercial  
Space Sharing Agreement

Second Birthday  
USSC Celebrates



# STARS OF THE COMMAND

## CELEBRATING OUR BEST AND BRIGHTEST

United States Space Command looked within its own ranks to recognize the service members who perform above and beyond. These hardworking men and women set the example of dedication and professionalism, propelling our combatant command to a whole new level of excellence.



### USSPACECOM



Every day is an opportunity to learn about space, how to better employ our weapon system and learn about the Guardians I serve with. There isn't a better environment to reflect on past successes and failures, embrace new challenges and work toward improving our mission.

#### **1st Lt. Claudia Martinez, U.S. Space Force**

Weapons and Tactics Flight Commander  
16th Space Control Squadron  
Space Operations Command, U.S. Space Force



\*Information accurate at the time of the award.





## USSPACECOM



"I wish people understood how new everything we are doing here is. Although we have been working this mission set for years, we are still learning to adapt how we are used to operating to the current mission set. It's also even more challenging for those who come from other branches."

**Warrant Officer Matthew Elder, U.S. Army**

Targeting Analyst, Joint Task Force-Space Defense



## USSPACECOM



For my job, it takes personnel from across the various directorates (i.e. a village) to produce the end result, and I give 110 percent effort to ensure we are all aligned to meet the objectives.

I serve because I enjoy the camaraderie, the innovation and the challenges the military affords me. As a result, this gives me the opportunity to develop and grow as an individual.

**Lt. Cmdr. Iris Wood, U.S. Navy**

Space Operations Officer,  
Contingency Operations Branch,  
U.S. Fleet Cyber Command/U.S. TENTH Fleet



## USSPACECOM



While the latitude provided in a one-deep position overseeing the operations of a GSU at a \$375M facility may seem appealing, it has its own set of challenges. Despite all these challenges, the support of the 821st Air Base Group and 821st Support Squadron allowed Det 1 to double its support capabilities during my time on island. I continue to serve because I enjoy the camaraderie, unique travel opportunities and, to be honest, I'm still having fun.

**Master Sgt. Jason Hubbartt, U.S. Air Force**

Detachment Chief, 23rd Space Operations Squadron,  
Detachment 1, Thule Air Base, Greenland





## USSPACECOM



Serving provides me the opportunity to give back to the people and service that's given me so much. The military has provided me the avenue to grow professionally/personally and I want to do my part to pass those opportunities to the next generations of leaders and war fighters.

**Col. Marcus Jackson, U.S. Space Force**

Deputy Director, National Space Defense Center  
Deputy Operations Chief, Joint Task Force-Space Defense



## USSPACECOM



**I serve because I believe in the work we do at the RSSC to aid in the continuous flow of communication that contributes to the overall defense of this country.**

Every organization needs resilient, dedicated personnel in its ranks ensuring I's are dotted and T's are crossed. I am both proud and honored to be one of these professionals.

**Tia Morgan, DOD civilian**

Super High Frequency Wideband Satellite Communications Planner  
at Regional SATCOM Support Center Pacific



U.S. Army Space and Missile Defense Command







## USSPACECOM



The variety of missions within 1st Space Brigade and the worldwide scope of the unit ensure that every day is new and interesting. This job never gets stale. I have found the challenges are consistently engaging and professionally rewarding.

**U.S. Army Maj. John J. Sheridan**

Operations Planner, 1st Space Brigade  
U.S. Army Space and Missile Defense Command



## USSPACECOM

Major Sagerholm is a J59 Space Operations Officer at United States Space Command. He is an avid musician who regularly volunteers his talents in the local Colorado Springs community. Major Sagerholm is also a strong advocate of religious education for children. During his time away from USSC, he plays guitar and sings at Saint Paul Catholic Church.

**Major Dane Sagerholm | USMC**

J59 Space Operations Officer  
U.S. Space Command, Peterson Space Force Base, CO.



## USSPACECOM



Strategic planning is about planning the 'what's next' to happenings occurring in our area of responsibility. We are on the leading edge of current events, developing the plan steps ahead of execution. Being part of the A5/B team enables me to help design the strategic planning picture for NORAD/NORTHCOM and USSPACECOM in support of Homeland Defense, Defense Security Cooperation Agency and Human Space Flight Support.

**Maj. Keven Dunn, U.S. Air Force**

Deputy Chief, Strategic Plans  
Continental U.S. North American Aerospace Defense Command  
First Air Force (Air Forces Northern)



# KEY TASK 1



## UNDERSTANDING THE COMPETITION

### USSC COMMANDER DISCUSSES SPACE DOMAIN AWARENESS, OPERATING ENVIRONMENT OF SPACE AT SENATE HEARING

U.S. Space Command Public Affairs | April 21, 2021

Army Gen. James Dickinson appeared before the Senate and House Armed Services Committees on April 20 and 21 in Washington, D.C. The U.S. Space Command commander testified alongside Navy Adm. Charles Richard, commander of U.S. Strategic Command. The two were the latest combatant command senior leaders to appear before Senate and House committees in review of the Defense Authorization Request for Fiscal Year 2022 and the Future Years Defense Program. Dickinson represented the nearly 18,000 military, civilian and contractor personnel supporting the USSPACECOM mission.

"The foundation of our strength is our people," he said. "Our extraordinarily diverse force will continue balancing combat readiness and preparing for the future. We will provide our people a working environment and culture that allows them to thrive while reaching their full potential."

During his testimony, Dickinson offered insight into the command's plans for the future, which are aligned with the President's new Interim National Security Strategic Guidance. The Department of

Defense's newest combatant command has made tremendous progress since Dickinson took command in August 2020. This progress includes integrating two functional component commands, establishing service component commands, significantly advancing space warfighting capability, and continuing to support the Joint Force with exquisite space capabilities.

"While largely focused from the geosynchronous belt to the last tactical mile on earth, we are opening our aperture to keep pace with our nation's expansion into the cislunar region, to the moon, Mars and beyond," Dickinson said.

Dickinson went on to discuss adversaries' actions and the command's response. China's space enterprise continues to mature rapidly, presenting a pacing threat, he said.

"They invest heavily in space, with more than 400 satellites on orbit today, and China could have as many as 1,000 on orbit by the end of the decade," Dickinson said. "China is building military space capabilities rapidly, including sensing and communication

systems, and numerous anti-satellite weapons. All the while, China continues to maintain their public stance against the weaponization of space.”

Russia published military doctrine calling for employment of weapons to hold U.S. and allied space assets at risk. Dickinson discussed Russia’s actions in space going back to 2017, including a recent space-based anti-satellite weapon test, that demonstrates Russia’s aim to restrict the capabilities of the United States.

“They clearly have no intention of halting their own ground-based and on-orbit counterspace weapons systems,” Dickinson said.

Overlaying this new global security landscape on the already complex operating environment of space demands a new level of awareness on USSPACECOM’s part. Given the President’s Interim National Security Strategic Guidance calls for “ensuring the safety, stability and security of outer space activities,” the command is focused on its number one priority of enhancing existing and developing new Space Domain Awareness capabilities.

“SDA gives us insight into activity throughout the space domain, including potential adversary activities, but perhaps more importantly, insight into the intent of those potential adversaries, too,” Dickinson said.

SDA provides decision quality information to combatant commanders and the National Command Authorities to ensure USSPACECOM can provide viable options throughout the spectrum of operations from deterrence to warfighting.

“All of this helps inform our understanding of adversary behavior,” Dickinson said.

In order to most effectively accomplish the Unified Command Plan-directed mission set, USSPACECOM has assessed current capabilities, and developed the requirements necessary to expand that capability where needed to meet mission imperatives.

“We have passed those requirements along to our



‘organize, train and equip’ service components, and to the Department of Defense in general,” Dickinson said. “Our intent is to build the appropriate space warfighting architecture designed to achieve Full Operational Capability, backed by a team of warfighters who outthink and outmaneuver our adversaries, and, if necessary, win through space combat power.”

These efforts are informed by Dickinson’s recently published “Commander’s Strategic Vision,” which details the critical importance America places on space, how space enables every facet of modern life, how space makes the achievements of America’s military possible and how space is the backbone to the global economy.

Five key tasks are outlined in the Commander’s strategic vision. Understanding our Competition; Building the Command to Compete and Win; Maintaining Key Relationships; Maintaining Digital Superiority and Integrating Commercial and Interagency Organizations.

“These key tasks will help focus our efforts on what’s necessary to achieve the ultimate objective of the military space mission: deterring a conflict that begins in, or extends into space,” Dickinson said. “With the help of members of this committee, and all of Congress, we will achieve that ultimate objective, and ensure that the United States and our allies will never have a day without space.



# KEY USSC TASK 2

## BUILDING THE COMMAND TO COMPETE AND WIN USSPACECOM RELEASES COMMANDER'S STRATEGIC VISION

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By U.S. Space Command Public Affairs | February 3, 2021

U.S. Army Gen. James Dickinson, U.S. Space Command commander, released his strategic vision during a command town hall Jan. 28. During the town hall, Dickinson set the baseline for the command's mission, vision, key tasks as well as identifying four Space Truths. However, Dickinson made clear the document is intended not only for USSPACECOM personnel, but also so the American people, allies and partners and competitors understand the critical mission of the command.

"The intended audience is both internal and external," Dickinson said. "The objective is to set the stage for USSPACECOM personnel to develop and sustain a warfighting mindset and rally behind a unified mission while also making crystal clear to our warriors, our allies and partners, the American people and our adversaries that USSPACECOM is prepared to protect and defend the space domain."

The commander's strategic vision outlines how

competitors are developing, testing and deploying counter space capabilities and evolving their military doctrines to extend conflict into space. In the process, they are challenging U.S. security and prosperity and turning a once-peaceful environment into a warfighting domain.

"U.S. and allied militaries use space systems to connect, warn, guide and inform decisions across the entire spectrum of conflict from space to the last



tactical mile,” Dickinson said. “U.S. Space Command will not sit back and watch — we’re going to act. We are going to deter conflict from extending into space and respond decisively if deterrence fails.”

The command recognizes retaining space superiority requires a combined approach. Strengthening alliances and building new partnerships are foundational to global prosperity, which is not only powered by space, but is also heavily reliant on the

free flow of information from and through space.

“USSPACECOM is a team of warfighters prepared to fight and win in combat to preserve United States and allied space superiority,” Dickinson said. “We will out think and outmaneuver our competitors and if necessary, dominate through sustained, comprehensive U.S. space power to ensure there is never a day without space.”

# KEY USSC TASK 3

## MAINTAINING KEY RELATIONSHIPS

### GLOBAL LIGHTNING EXERCISE TESTS MULTI-DOMAIN SPACE CAPABILITIES

U.S. Space Command Public Affairs | April 2, 2021

More than 100 U.S. Space Command personnel and 900 total participants took part in Global Lightning 2021 on March 8-12, which integrated space capabilities into a multi-domain exercise. Global Lightning is an annual Department of Defense exercise designed to train joint and combined forces to assess operational readiness in creating conditions for effective deterrence against a variety of threats. This year's simulated conflict scenario involved three combatant commands: USSPACECOM, U.S. Strategic Command and U.S. European Command.

"Space is critical to any fight," U.S. Army Gen. James Dickinson, USSPACECOM commander, said. "This exercise gave us a good look out how we, as combatant commands, are coordinating, cooperating and executing decisive military actions across multiple domains."

Throughout the five-day exercise, USSPACECOM headquarters staff and its components integrated and synchronized interoperability efforts with USSTRATCOM, USEUCOM, allies and partners.

"We train how we fight," said U.S. Air Force Col. Frank Kincaid, deputy director of USSPACECOM's Joint Space Operations Forces Development Directorate. "We are giving our joint warfighters the capability to command and control joint space forces, integrating a whole-of-government approach and sharing decision quality information to the last tactical mile."

The Australian Defence Force, the Canadian Defence Force and United Kingdom Ministry of Defence all had direct participation in Global Lightning 21.





“Every opportunity to train with our allies and partners improves our military capabilities,” said Space Force Brig. Gen. Devin Pepper, deputy director of USSPACECOM’s Strategy, Plans and Policy Directorate. “On an increasing scale, our allies make our collective security efforts in space more effective.”

Space — like air, land, sea and cyber — is a unique environment. The scope and complexity of the threats to space capabilities continues the need to train space warriors to out think and outmaneuver.

“Our goal is to deter a conflict in space, but we need to be prepared to win, if defense is necessary,” Dickinson said. “And this is why we continue to test our space warfighters, allowing them to enhance their skill sets in ensuring a safe, secure, stable and sustainable space domain.”

# KEY USSC TASK 4

## MAINTAINING DIGITAL SUPERIORITY

### CFSCC SPOTLIGHT: AIR NATIONAL GUARD UNIT PROVIDES ESSENTIAL SECURE SATELLITE COMMUNICATIONS

By Lt. Col. Mae-Li Allison, Combined Force Space Component Command Public Affairs | April 29, 2021

Perched on a scrub-oak-covered hilltop on the central coast of California is a small Air National Guard squadron that makes a big contribution to the Combined Force Space Component Command's mission to provide space capabilities to the joint warfighter and allied partners. For more than 20 years, the 148th Space Operations Squadron has been a caretaker of the Air Force's protected Military Satellite Communications system, providing 24-hour monitoring and support of the satellites, seven days a week. "Our Air National Guard teammates at the 148th SOPS are well-trained space operators who give our warfighters an essential tool — dependable, secure communications," Maj. Gen. DeAnna Burt, CFSCC commander, said. "We're very appreciative of their dedication to this important mission."

The 148th SOPS is one of two squadrons that oversee the MILSATCOM system.

"We share the mission and satellite command and control responsibilities with the 4th Space Operations Squadron, which is based out of Schriever Space Force Base, Colorado," said Lt. Col. Sahira DeMarco, the 148th SOPS director of operations. "During our normal operations we manage three of the 10 MILSATCOM satellites, and can take on responsibility for all of them when needed."

The specific MILSATCOM systems that the 4th and 148th SOPS manage and operate are the Military Strategic and Tactical Relay satellites, as well as the newer Advanced Extreme High Frequency satellites. The primary customers for secure satellite communications are combatant commands and the National Command Authority, which includes the President of the United States and the Secretary of Defense. "A good way to think of us here at Vandenberg is as an extension of the 4th





SOPS operations floor,” said Maj. Ruben Carrillo, 148th SOPS chief of operations training. “We take direction from the mission commander there at Schriever, and requests for secure space communications capabilities and effects come through U.S. Space Command through the CFSCC.”

More than 50 Air National Guard personnel are part of the squadron, which has also been particularly busy these past couple of years supporting its state mission.

“It is rewarding to accomplish this federal mission day-in and day-out, while still maintaining a ready and trained force to support the state emergency response mission,” said Carrillo, who was an active-duty enlisted civil engineer prior to joining the Air National Guard. “We’ve been very busy in recent

years with wildfire support, responding to civil unrest, working in food banks, and assisting in COVID vaccine clinics.” The 148th SOPS is one of three California National Guard space squadrons, and the California National Guard is only one of eight different National Guard organizations — located in seven states and one U.S. territory — that directly contribute to the space mission.

“The National Guard has more than 25 years of experience operating in the space domain,” said Lt. Col. Jeremiah Hitchner, National Guard advisor to the CFSCC commander. “There is no doubt that units like the 148th SOPS are essential to daily space operations and will continue support our joint and coalition warfighters well into the future.”



# KEY USSC TASK 5

## INTEGRATING COMMERCIAL & INTER AGENCY ORGANIZATIONS

### JTF-SD, NSDC FOUNDATIONAL TO PROTECTING THE SPACE DOMAIN

By Jennifer Thibault, Joint Task Force-Space Defense Public Affairs | June 10, 2021

The National Space Defense Center and its parent headquarters, the Joint Task Force-Space Defense—both with a mission to protect and defend national interests in the space domain—have come a long way since their high-profile beginnings almost six years ago.

The Department of Defense and intelligence community established the NSDC, originally called the Joint Interagency Combined Space Operations Center, in 2015 to create a unity of effort and facilitate information sharing across the national security space enterprise.

“We provide a unity of effort working together with those disparate communities, the Department of Defense, the intelligence community, the National Reconnaissance Office and their representatives that sit on the National Space Defense Center floor,” said Col. Scott Brodeur, who is dual hatted as the JTF-SD director of operations and director of the NSDC. “We do the planning and the execution to protect and defend our critical space assets.”

Additionally, the center maintains vigilant watch on activities in space, warns against emerging threats and orchestrates U.S. counter-space operations.

“The NSDC gathers information from the

Intelligence Community, commercial companies (that we contract and partner) and all the sensors in the Department of Defense’s space surveillance network and fuses them to create an integrated sensor support plan,” Brodeur said.

The organization also directs the command and control of the Geosynchronous Space Situational Awareness Program, or GSSAP.

“As the ‘neighborhood watch’ of the GEO belt, GSSAP can characterize objects in space to a refined level allowing us to discriminate and characterize those objects,” U.S. Army Brig. Gen. Tom James, JTF-SD commander, said. “In doing so, we can identify competitors and provide threat-focused space domain awareness.”

The JTF-SD was formally recognized in 2019 as a subordinate command to U.S. Space Command during a ceremony at Schriever Air Force Base, Colorado.

The JTF-SD is a joint organization with an interagency center including representatives across the services working alongside NRO, intelligence community and commercial partners. In the 20 months since its establishment, the JTF-SD has seen increasing proliferation of and demand for on-orbit space capabilities in the domain it’s charged to protect.



"Today, even as potential adversaries continue their effort to achieve parity in space capability, they also employ asymmetric capabilities to deny us the advantages of space," Army Gen. James Dickinson, USSC commander, said in his testimony before the Senate in April. "The U.S. must continue to build resilience in the vital space capabilities the joint force requires to fight and win in space, as well as in the air, land, sea and cyber domains, while strengthening its space warfighting capability to counter these rising peer, near-peer and asymmetric threats."

Such warfighting capability provides a credible deterrent against belligerent actions in the space domain as part of a broader U.S. strategy for deterrence and defense," he added.

"The JTF was established as a direct response to the actions of competitors like China and Russia that threaten our ability to maintain unfettered access to and freedom to operate in the space domain," James said. "The Office of the Director of National Intelligence highlighted those threats, which include China and Russia's fielding of antisatellite weapons to disrupt and degrade U.S. and allied space capabilities, in its annual threat assessment in April."

In addition to its unprecedented unity of effort with the DoD, IC and NRO in the space domain, the JTF-

SD integrates systems and capabilities to give the combatant command options to protect and defend national, allied and partner space assets.

"JTF-SD has a commercial cell right here in Colorado Springs that helps us bring in more space domain awareness capabilities," Brodeur said. "We develop tactics, techniques and procedures to collect space domain awareness data and share it with the rest of our partners."

USSC's other subordinate command, the Combined Force Space Component Command, is located at Vandenberg Space Force Base, California.

"Everything we do at the JTF-SD is focused on our protect and defend mission," James said. "But we are not alone. Our partner in these efforts is our fellow component. As JTF-SD conducts space superiority operations to deter aggression, defend capabilities and defeat adversaries throughout the continuum of conflict; CFSCC works to ensure space-based capabilities are integrated across the combatant commands and to communicate warnings to U.S. government satellite operators, our allies and the commercial sector and even our competitors; just as we do in the air and maritime domains. Together we support USSC to ensure there is never a day without space."





# COMBINED FORCE SPACE COMPONENT COMMAND

**MISSION:** Plan, integrate, conduct and assess global space operations in order to deliver combat relevant space capabilities to combatant commanders, allied partners, the joint force and the nation.

CFSCC plans and executes space operations through four distinct and geographically dispersed operations centers, including: Combined Space Operations Center at Vandenberg Space Force Base, California; Missile Warning Center at Cheyenne Mountain Space Force Station, Colorado; Joint Overhead Persistent Infrared Planning Center at Buckley Space Force Base, Colorado; and Joint Navigation Warfare Center located at Kirtland Air Force Base, New Mexico. Additionally, the CFSCC executes tactical control over globally dispersed Army, Navy and Air Force units that command ground-based space capabilities and satellites in every orbital regime. The CFSCC

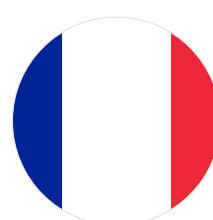
headquarters is co-located with the Combined Space Operations Center at Vandenberg SFB, Calif.

One of CFSCC's primary roles is to plan, task, direct, monitor, and assess the execution of combined and joint space operations for theater effects on behalf of the commander, USSC in order to directly integrate with ongoing operations in other combatant commands. The CFSCC also provides support to, and receives support from, coalition operations centers including the Australian Space Operations Center, Canadian Space Operations Center, and United Kingdom Space Operations Center. Additionally, the CFSCC builds capacity through relationships with



VANDENBERG SPACE FORCE BASE, CALIFORNIA

**CFSCC**



## BUILDING INTERNATIONAL PARTNERSHIPS

partner nations' militaries and civil and commercial entities to achieve combined force objectives.

The CFSCC provides space capabilities such as space domain awareness, space electronic warfare, satellite communications, missile warning, nuclear detonation detection, environmental monitoring, Intelligence, Surveillance and Reconnaissance, navigation warfare, command and control, and positioning, navigation and timing in support of USSC and the other combatant commands. The CFSCC also executes command and control of assigned multinational forces in support of Operation Olympic Defender, as directed by USSC. The United States and partner nations unequivocally

recognize the strategic importance the space domain has on our economies, technology, national security, and defense. To that end, we collectively share the view that military cooperation concerning the space domain is vital to our countries' interests. Our respective nations are actively working together to address threats and shared interests in space; and to preserve access to the space domain for the defense of our nations and the future of humankind.



# JOINT TASK FORCE SPACE DEFENSE

**PURPOSE:** The Joint Task Force-Space Defense, Schriever Space Force Base, Colorado, was formed as a functional component command under U.S. Space Command Aug. 29, 2019, and recognized in an establishing ceremony Oct. 21, 2019. The Joint Task Force-Space Defense's mission is, in unified action with mission partners, to deter aggression, defend capabilities and defeat adversaries throughout the continuum of conflict in order to maintain space superiority in the U.S. Space Command area of responsibility. The JTF-SD executes its protect and defend mission through its operations center, the National Space Defense Center, space domain awareness units and emerging space defense units.

## HOW WE WIN

By providing America and her allies the most lethal and versatile space warfighting organization in the world, operated by the most formidable space

warriors, armed with superior domain understanding and ready to employ space superiority capabilities at the time and place of our choosing.





SCHRIEVER SPACE FORCE BASE, COLORADO

**JTF-SD**

## PARTNER RELATIONSHIPS

The JTF-SD and its National Space Defense Center provide unprecedented unity of effort with the Department of Defense, Intelligence Community and National Reconnaissance Office to protect and defend against threats in the space domain. Through this partnering, the JTF-SD brings to bear the full force of the U.S. Government and synchronizes space superiority planning and operations.

## THREE CORE FUNCTIONS

**Space Domain Awareness.** Effectively identify, characterize and understand any factor, passive or active, associated with the space domain that could affect space operations and thereby impact the security, economy or environment of our nation. This function includes generating an integrated sensor plan, high value asset clearing and pattern of life assessment among others.

**Indication and Warning.** Conduct 24/7 space and counter-space systems monitoring, identifying threatening and non-threatening activities to issue timely warning to satellite owners and operators. JTF-SD warning and collection informs of adversary capabilities and intent, influences response options and course of action planning and supports U.S. Space Command space attack assessment, operational posture and maintenance schedules.

**Space Superiority.** When called, protect and defend U.S. and allied interests in space permitting the conduct of operations at the time and place of our choosing. The Geosynchronous Space Situational Awareness Program is the NSDC's primary operational system which conducts exquisite intelligence characterization of on-orbit assets. Additionally, the JTF-SD executes campaign and contingency planning; exercises, experiments and war games; and capability integration and on boarding.



# U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND

**PURPOSE:** The U.S. Army Space and Missile Defense Command is the Army's force modernization proponent and operational integrator for global space, missile defense and high altitude capabilities.

USASMDC provides trained and ready space and missile defense forces and capabilities to the warfighter and nation. It builds future space and missile defense forces for tomorrow by researching, testing and integrating space, missile defense, cyber, directed energy, hypersonic and related technologies. Along with the command's Technical Center and Space and Missile Defense Center of Excellence, it has three major subordinate military elements, the 100th Missile Defense Brigade (Ground-based Midcourse Defense), the 1st Space Brigade and the U.S. Army Satellite Operations Brigade.

## **100th MISSILE DEFENSE BRIGADE**

The 100th Missile Defense Brigade operates the

Ground-based Midcourse Defense System and functions as the missile defense component of the missile defense enterprise of the command. Operating under the brigade are Soldiers of the 49th Missile Defense Battalion. These Soldiers not only operate the GMD system but provide security for the Missile Defense Complex at Fort Greely, Alaska.

## **1ST SPACE BRIGADE**

Leading the command in space operations is the 1st Space Brigade. The brigade consists of the 1st Space Battalion and 2nd Space Battalion, as well as the 117th Space Battalion under a direct support relationship. The 1st Space Brigade conducts continuous space force enhancement and space control operations in support



REDSTONE ARSENAL, AL | PETERSON SPACE FORCE BASE, CO

**USASMDC**

## HITTING A BULLET WITH A BULLET

of combatant commanders. The brigade also contains five Missile Defense Batteries that operate the AN/TPY-2 radars in forward-based mode conducting ballistic missile search, track and discrimination operations in support of regional and homeland defense.

### **U.S. ARMY SATELLITE OPERATIONS BRIGADE**

Providing satellite communications for the command is the U.S. Army Satellite Operations Brigade. Established in 2019, the brigade executes continuous tactical, operational and strategic satellite communications payload management across the full spectrum of operations. The brigade consists of the 53rd Signal Battalion and the SATCOM Directorate. The brigade's satellite communication payload planning and control function is set to transition to the Space Force in FY22.

### **TECHNICAL CENTER**

The Technical Center manages science and technology, research and development, and conducts test programs for space, integrated air and missile

defense, directed energy, hypersonic and related technologies. It provides critical technologies that meet today's requirements and addresses future needs enabling warfighter effectiveness in the core competencies of directed energy, space, high altitude systems, cyberspace and missile defense.

### **SMD CENTER OF EXCELLENCE**

The Space and Missile Defense Center of Excellence is the command's architect for future force design. The team is charged to design, build, modernize, train and educate Army space and missile defense forces and is the Army's force modernization proponent responsible for managing Army change to doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy.

### **ARMY ASTRONAUT PROGRAM**

USASMDC is also the proponent for the Army astronaut program and provides support to NASA with an Army detachment assigned to Johnson Space Center in Houston, Texas.





# NAVY SPACE COMMAND

**PURPOSE:** U.S. Navy Space Command is the Navy's effort in maintaining maritime superiority from the sea floor to space with a core emphasis on lethality, readiness and capacity, conducting space-enabled targeting and protection of critical maritime assets.

## CAPABILITIES

Navy Space Command is part of the only global numbered fleet with forces around the world supporting the geographic combatant commanders in defending our networks and carrying the fight to the adversary, especially in the space domain. The Navy is expanding the level of expertise and

warfighting capacity in the space domain, while NAVSPACECOM integrates space with distributed maritime operations. NAVSPACECOM is the Navy's component command in support of U.S. Space Command. By working with USSC and service counterparts, FCC/C10F is able to provide



FORT MEADE, MARYLAND

# NAVSPACE

## NAVSPACECOM IS THE NAVY'S COMPONENT COMMAND IN SUPPORT OF UNITED STATES SPACE COMMAND

the best integration possible of space capabilities throughout the fleet.

NAVSPACECOM organizes operations for the Navy's assigned satellite systems, ground stations and networks, while integrating space situational awareness for Distributed Maritime Operations and delivering space control capabilities to support Navy missions.

The Naval Space Command was established in 1983 to strengthen operational control of naval space systems and provide a focal point for operational naval space matters. In 1985, USSC

was first established as a functional combatant command to provide joint command and control of the Air Force, Army and Navy's space forces, as well as prepare for the implementation of the Strategic Defense Initiative. In the 1990s, the Naval Satellite Operations Center was established to operate the Navy's assigned satellite constellations.

Today, we look to space as a seamless part of naval operations, with the Navy being the most reliant of the services on space for communications, navigation, surveillance, weather and oceanographic support.



# MARINE CORPS FORCES SPACE COMMAND

MARFORSPACE provides operational support to the Fleet Marine Force. It is a distributed force, integrated throughout the United States Space Command enterprise to increase warfighter lethality and provide domain-specific access to warfighting capabilities.

Gen. David Berger, Commandant of the U.S. Marine Corps, directed the activation of a new Marine Corps forces command subordinate to United States Space Command effective Oct. 1, 2020.

MARFORSPACE, headquartered at Fort Meade, Maryland, trains and develops the Marines supporting the Department of Defense's 11th combatant command. Created from the existing space expertise in Marine Corps Forces Strategic

Command, MARFORSPACE focuses on providing space operational support to the Fleet Marine Force while building a convergence capability to increase warfighter lethality.

Maj. Gen. Ryan Heritage took command of MARFORSPACE from now Lt. Gen. Matthew Glavy on July 7, 2021. The MARFORSPACE colors were also uncased during the ceremony. Heritage is dual-hatted as the commander of Marine Corps





FORT MEADE, MARYLAND

# MARFORSPACE

Forces Cyberspace Command. "We have an incredible opportunity to create a synergy across the information environment based on our unique position within the naval and joint force," Glavy said following MARFORSPACE's activation last year. "Space and cyber are critical capabilities in the information environment that, when brought together, can provide a competitive advantage. Convergence requires flexible and interconnected teams focused on solving hard problems with speed. We cannot be successful in these technology-heavy domains without prioritizing people, ideas and things ... in that order."

While Heritage commands both MARFORSPACE, which reports to USSC, and MARFORCYBER, which reports to U.S. Cyber Command, the two units will

remain separate and distinct commands.

"MARFORSPACE strengthens our space warfighting capabilities with an esprit de corps and warrior ethos unlike any other," U.S. Army Gen. James Dickinson, USSC commander, said during the July change of command ceremony.

Heritage said he looked forward to working with Dickinson and USSC as he and his team grow the Marine Corps' capability to integrate and enable the joint force through space operations.

"I remember not too long ago, the Marine Corps space component was a single handful of Marines," Heritage said.

"This command is about people. It is about readiness. It is about relevancy and agility and a culture of winning."



# FIRST AIR FORCE

## FIRST AIR FORCE JOINS U.S. SPACE COMMAND JOINT TEAM TAKES ON COMMAND OF DETACHMENT THREE RESCUERS

For First Air Force, the year 2021 has been a year of significant change as it took on a new role. On March 11, First Air Force, headquartered at Tyndall Air Force Base, Florida, was named by the U.S. Air Force as the future air component to U.S. Space Command. The new air component is expected to achieve initial operating capability by the end of calendar year 2021.

“The U.S. Air Force is a critical contributor to the U.S. Space Command mission as evidenced by their support to Human Space Flight,” said U.S. Army Gen. James Dickinson, USSC commander. “We welcome First Air Force to our joint team.”

The other news of interest was the alignment of Detachment 3, Space Launch Delta 45 (formerly the 45th Space Wing), Patrick Space Force Base, Florida under First Air Force as part of First Air Force’s support to U.S. Space Command. First Air Force presided over

the Det. 3 Re-designation and change of command July 15 at Cape Canaveral Space Force Station, Florida.

Det. 3 is the only unit within the Department of Defense tasked to support contingency operations during Commercial Crew Program launches alongside interagency partners. For all crewed flights, Det. 3 plays the role of overseeing postured rescue forces on alert at Patrick SFB, Joint Base Charleston in South Carolina and Joint Base Pearl Harbor-Hickam in Hawaii.





## TYNDALL AIR FORCE BASE, FLORIDA

# 1AF

The rescue forces are comprised of total force Airmen from Air Mobility Command and Air Combat Command to include Active Duty and Air National Guard Airmen. These Airmen have mastered an array of specialties; from pilots and flight doctors to para-rescuemen and communication operators.

For mission execution Det. 3 conducts global command and control of the rescue team which grows from 33 to over 140 members ready to rescue astronauts from one of its three locations. The rescue team is responsible to rescue and recover the astronauts from their capsule that may splashdown in the ocean during crewed space operations. The rescue team trains in the intricacies of space medicine, dealing with deconditioned astronauts, hazard detection techniques to save the capsule and procedures for extracting the crew from the spacecraft.

Det. 3 and their rescue forces live out the same motto; these things we do, that others may live, so that an astronaut's worst day is not their last. Det. 3

has been involved in the rescue of astronauts since the Mercury program days and has supported all crewed programs to include Gemini, Apollo, Skylab/ Soyuz and now Commercial Crew and Artemis. As First Air Force Headquarters attains initial operating capability as the Air Force Service component to U.S. Space Command, it is anticipated to be designated as Air Forces Space or "AFSPACE." In the meantime, stakeholders at many levels within the Department of the Air Force and USSC are determining the specifics of what the AFSPACE designation entails to include authorities, manpower, responsibilities, roles and missions. "We look forward to supporting USSC in their efforts to defend against threats to the space domain," said Air Force Lt. Gen. Kirk Pierce, First Air Force commander. "First Air Force will continue to provide uninterrupted air component support to North American Aerospace Defense Command and U.S. Northern Command while also exercising command and control over Air Force forces supporting U.S. Space Command."





# SPACE OPERATIONS COMMAND

**MISSION:** Space Operations Command protects America and our Allies in, from, and to space – now and into the future.

SpOC is the primary force provider of space forces and capabilities for combatant commanders, coalition partners, the joint force and the nation and is headquartered at Peterson Space Force Base, Colorado. SpOC headquarters also supports U.S. Space Command's Combined Force Space Component Command.

## **SpOC Priorities include:**

**Preparing an empowered, diverse, combat-ready force:** Space Operations Command is U.S. Space Force's fight-tonight force. Our operations will be led by intelligence about the threats we face, and we will be cyber-secure in all we do. We will be a warfighting organization in which decisions and the ability to accept risk are pushed to the lowest level, and in which all our diverse members are respected, able to fully contribute, and free to rise to the level of their talents.

**Partnering across all stakeholders:** As a global partner to our sister services, interagency partners, allies, academia and commercial entities, we are committed to being good teammates with all our stakeholders to produce space security for America and its allies. Additionally, we will continue to carry functions for, and provide support to, Space Systems Command, Space Training and Readiness Command, and the Space Warfighting Integration Center until those organizations are fully stood up and matured. We pledge to be an effective and engaged USSF Service Component for U.S. Space Command.

**Projecting combat power in, from, and to space:** Space Operations Command provides Combat Power Projection, Information Mobility, Space Domain Awareness, and Space Mobility and Logistics. Further, SpOC fosters and incubates innovation from all levels of the force, and fully supports the drive to build a Digital Service. Additionally, SpOC maintains responsibility for launch operations at Space Base Deltas 30 and 45 at Vandenberg Space Force Base, Calif., and Patrick SFB/Cape Canaveral Space Force Station, Fla., respectively, and will do so until Space Systems Command is activated.



HQ AT PETERSON SPACE FORCE BASE, COLORADO

SpOC

**Delta 1:** Was the provisional designation for U.S. Space Force's Space Training and Readiness Command, Peterson Space Force Base, Colorado. STARCOM was activated August, 2021, and is responsible for training readiness of USSF guardians.

**Delta 2:** Space Domain Awareness--Integrates ISR, space observation and environmental monitoring to enable space battle management and support. Headquartered at Peterson Space Force Base, Colorado.

**Delta 3:** Space Electronic Warfare--Operates electronic attack, protection and support capabilities to protect and defend the space domain. Headquartered at Peterson Space Force Base, Colorado.

**Delta 4:** Missile Warning--Provides strategic and theater missile warning to the United States and our international partners. Headquartered at Buckley Space Force Base, Colorado.

**Delta 5:** Command & Control--Maintains global awareness of operational environments and space forces to enable data-driven decision. Headquartered at Vandenberg Space Force Base, California.

**Delta 6:** Cyber Operations--Executes cyber operations to protect space operations, networks, and communications and operates the Satellite Control Network. Headquartered at Schriever Space Force Base, Colorado.

**Delta 7: Intelligence, Surveillance & Reconnaissance**--Provides intelligence data to allow for the detection and characterization of adversary space capabilities. Headquartered at Peterson Space Force Base, Colorado.

**Delta 8: Position, Navigation & Timing**--Provides position, navigation, timing and satellite communications to U.S. military, coalition partners, interagency partners, and commercial/civilian use. Headquartered at Schriever Space Force Base, Colorado.

**Delta 9: Orbital Warfare**--Conducts protect and defend operations and provides national decision authorities with response options to deter and, when necessary, defeat orbital threats. Headquartered at Schriever Space Force Base, Colorado.





# NEVER A DAY

FROM THE ULTIMATE HIGH GROUND





# WITHOUT SPACE

TO THE LAST TACTICAL MILE







STROKE 1  
STROKE 2  
TOTAL INFORMATION

STROKE 1  
STROKE 2  
TOTAL INFORMATION

STROKE 1  
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