



Space Detachment

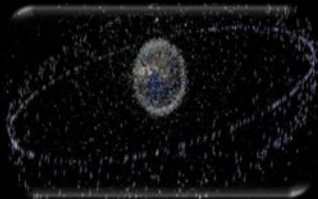
United States Air Force
Academy

Delta 13 Det 1

The U.S. Space Force **ORGANIZES, TRAINS** and **EQUIPS** forces to
Secure our Nation's interests in, from, and to space



**Space Electromagnetic
Warfare**



Orbital Warfare



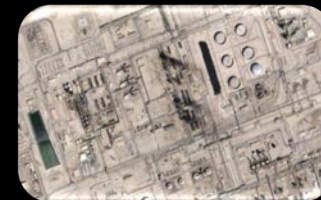
Space Battle Management



**Space Access &
Sustainment**



Cyber Operations



Military Intelligence



Engineering & Acquisitions

“ Even in the face of **ACCELERATING THREATS**, the Space Force remains the preeminent military space organization in the world ... our **GUARDIANS** will **PRESERVE** and **EXPAND** our **STRATEGIC ADVANTAGE**, and we will step up to meet the **CHALLENGE** of our **PACING THREAT**. ”

General Chance Saltzman
Chief of Space Operations, U.S. Space Force





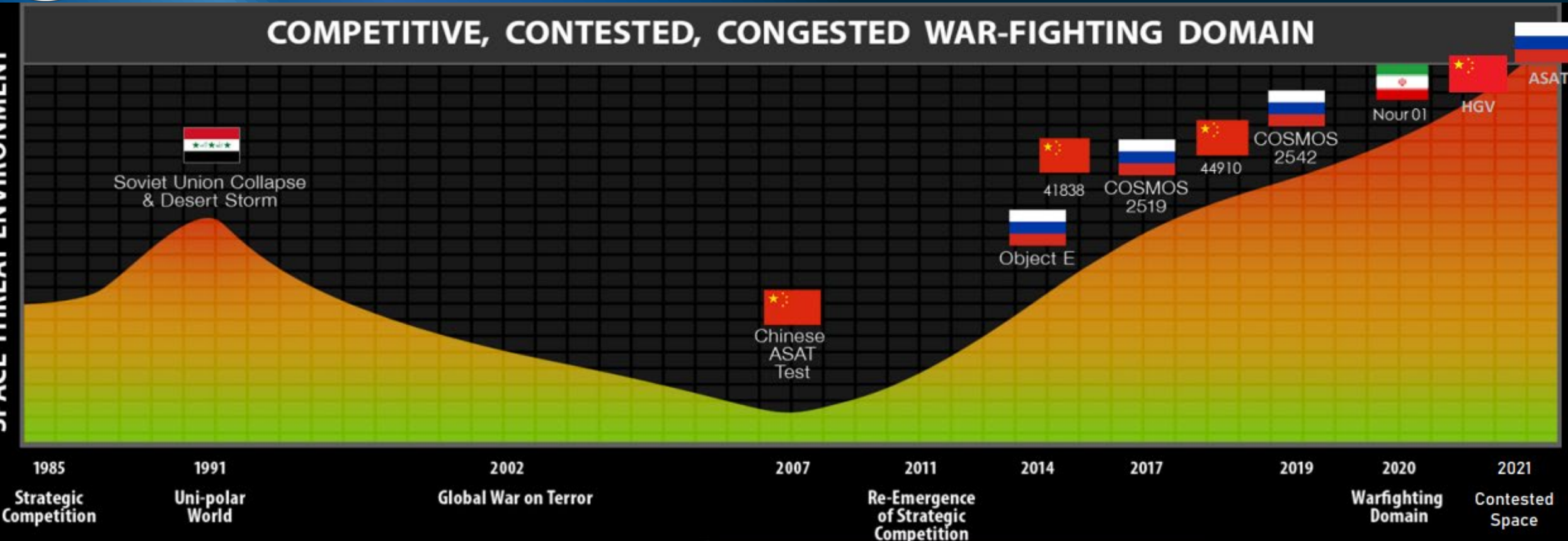
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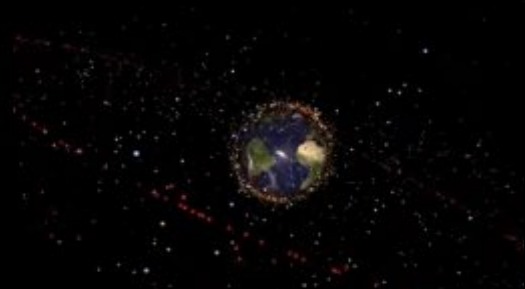
Space Operating Environment Over Time

COMPETITIVE, CONTESTED, CONGESTED WAR-FIGHTING DOMAIN

SPACE THREAT ENVIRONMENT



BUILD UP OF DOMAIN CONGESTION



 
COMPETITORS

 
NASCENT ACTORS

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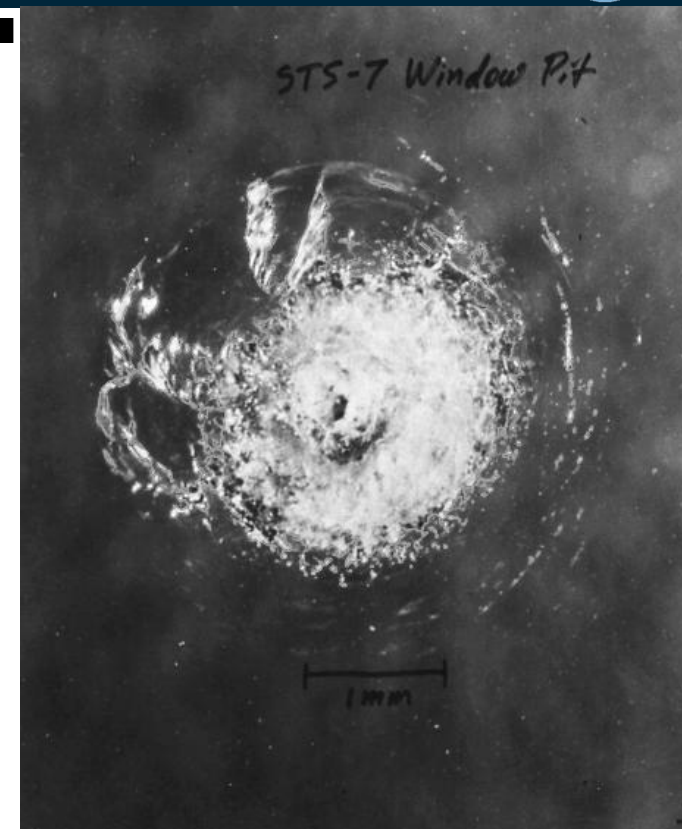


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Space Debris and Meteoroids

- More than 6,500 successful rocket launches
- ~44,700 catalogued objects (CSpOC) (29 Feb 24)
 - *But what can we not see?*
- ESA's space debris office estimates (6 Dec 23)
 - 36,500 > 4 inches
 - 1 million between $\frac{1}{2}$ – 4 inches
 - 130 million < $\frac{1}{2}$ inches
- Impact of low Earth orbit proliferation
 - Starlink constellation – 30,000 satellites
 - OneWeb – 6,372 satellites



Space shuttle window hit by a paint flake

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USAFA

One Academy – Two Services: the
Intellectual Home of the US Space
Force

Educate, train and inspire cadets to
become officers of character
motivated to lead the U.S. Space
Force

Military ▲ Academics ▲ Athletics ▲ Leadership





Building the Space Force

Class of 2024



Class of 2021	
Career-Field	Result
SPACE OPS	61
INTELLIGENCE	7
CYBERSPACE	6
ENGINEER	19
ACQUISITION	25
Total	118

Class of 2023	
Career-Field	Result
SPACE OPS	51
INTELLIGENCE	7
CYBERSPACE	4
ENGINEER	19
ACQUISITION	24
Total	105

Class of 2022	
Career-Field	Result
SPACE OPS	55
INTELLIGENCE	4
CYBERSPACE	4
ENGINEER	16
ACQUISITION	21
Total	100

Class of 2024	
Career-Field	Result
SPACE OPS	53
INTELLIGENCE	8
CYBERSPACE	4
ENGINEER	16
ACQUISITION	20
Total	101



= 122



= 4



USAFA receives the highest percentage of Guardian Commissioning slots for any single institution

Military ^ Academics ^ Athletics ^ Leadership

Space Operations (13S)



Intelligence (14N)



Cyber (17X)



Developmental Engineer (62E)



Acquisitions Manager (63A)



The U.S. Space Force Has Over 7,000 Uniformed Members With A Clear And Singular Focus On Space Spread Across The Globe, Executing Missions 24/7



USAFA Space Key Take-Away's



■ Training

- Developing Warfighters through two cadet space related squadrons, and one space related club
- Executes nationwide joint undergrad space education and training summer program (Azimuth)
- Created i5space program
- Integration of Space into Firstie Flag - preparing for leaders on Day One

■ Academics

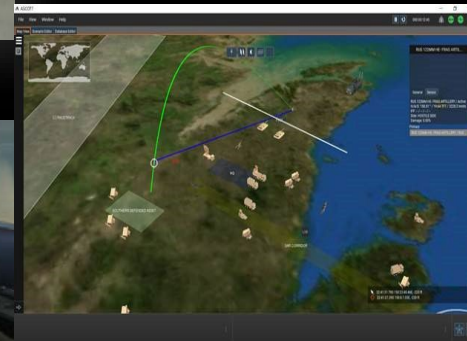
- USSF Spans several departments
- Created Space Warfighting Minor
- US News and World Report #1 Astro Program
- 100+ Summer Research Programs

■ Outreach

- Air and Space Forces' Academy Many Distinguished Visitors
- Works with local, national, and international partners to solve real world problems

USAFA Space Programs

- Fundamentals & Domain Awareness - all cadets
- Space Operations Experience - open to all cadets
 - Space Squadrons / Azimuth / Ops Space Force
- Educational Depth Options - major specific
 - Majors / Minor
 - Depth classes through several departments
 - Summer Research Opportunities with Government & Industry
- Hands-on space applications span 7+ USAFA research centers
 - Aeronautics (1), Astronautics (1), Physics (4), Poli Sci (1)
- Immersive Summer Experience(s)
 - Inclusion in Joint All-Domain Environment Working Group
 - Space Flag Warfighting Experience: Engage and understand complexities of space domain warfare
 - Space Bridge Course: link between USSF selection and OUST



Engineering Division

Astro Engr 310. Introduction to Astronautics*
Astro Engr 321. Intermediate Astrodynamics
Astro Engr 331. Space Systems Engineering
Astro Engr 332. Satellite Communications
Astro Engr 335. Human Spaceflight
Astro Engr 351. Rocket Propulsion
Astro Engr 422. Advanced Astrodynamics
Astro Engr 423. Space Mission Design
Astro Engr 431. Space Mission Payload Design (Spring 2021)
Astro Engr 436/437. FalconSAT Capstone Design
Astro Engr 445. Spacecraft Attitude Dynamics and Control

Space 251/252. FalconSAT Operator Certification
Space 350. FalconSAT Commander/Instructor Upgrade

Space Majors

- Astronautical Engineering
- Systems Engineering Astro

Space Minors

- Space Warfighting
 - Ops Track
 - Intel Track
 - Acquisition Track
 - Cyber/Data Track

Social Sciences Division

GEO 382. Remote Sensing and Imagery Analysis
GEO 482. Advanced Remote Sensing
Law 419. Space Law
MSS 444. Space & Cyber Strategy for National Security
Pol Sci 465. US National Space Policy

Basic Sciences Division

Chem 325. Space Chemistry
Physics 370. Upper Atmospheric and Geo-Space Physics
Physics 371. Astronomy
Physics 375. Physics of Space Domain Awareness
Physics 451. Plasma Physics
Physics 486. Astrophysics

Humanities Division

History 376. A History of Space Power: Conquest of the New Frontier

*** Mandatory for graduation**



Rocketry



Zero Gravity



AR/VR Experience



Site Visits



Neutral-Buoyancy

Developing USSF Warfighter Ready to Lead on Day One

Military ▲ Academics ▲ Athletics ▲ Leadership









Delta 13 Detachment 1 Overview Cont. - USAFA Path to Space



SUMMER

ACADEMIC YEAR

Focus:		Leadership Development and Practical Experiences	Space Domain Awareness	Fundamentals of Space	Space Operations Exposure (Elective)
1°	Leaders & Commanders 	Cadre Leadership/Senior Instructors for Azimuth	<ul style="list-style-type: none"> Additional Advanced Electives <ul style="list-style-type: none"> MSS 444*: Space & Cyber Strategy for National Security i5 Space (Optional) 	<ul style="list-style-type: none"> Additional Advanced STEM Electives* 	<ul style="list-style-type: none"> SPACE 473: Advanced Space Operations Instructor Blue Horizon Rocketry
			NOTIFICATION OF USSF SELECTION		
2°	Team Leaders 	Experiential Learning: <ul style="list-style-type: none"> Operations Space Force Cadet SNCOs for Azimuth 	<ul style="list-style-type: none"> Additional Advanced Electives* i5 Space (Optional) 	<ul style="list-style-type: none"> ASTRO 310: Introduction to Astronautics Additional STEM Elective* 	<ul style="list-style-type: none"> SPACE 472: Basic Space Operations Instructor Blue Horizon Rocketry
			USSF INTERVIEW		
3°	Supervisors 	Continuation of Core Training: <ul style="list-style-type: none"> SPACE 253: Azimuth 	<ul style="list-style-type: none"> MSS 251: Air & Space Power in Joint Operations Strategy Additional Electives i5 Space (Optional) 	<ul style="list-style-type: none"> Additional STEM Electives <ul style="list-style-type: none"> PHYS 215*: General Physics II Statistics Elective* 	<ul style="list-style-type: none"> SPACE 350: Advanced Space Operations Blue Horizon Rocketry
4°	Followers 	Development of Basic Skills: <ul style="list-style-type: none"> BCT 	<ul style="list-style-type: none"> Contrails Additional Electives i5 Space (Optional) 	<ul style="list-style-type: none"> PHYS 110: General Physics I COMP SCI 110: Intro to Computing & Cyber Operations Additional STEM Electives 	<ul style="list-style-type: none"> SPACE 251: Basic Space Operations Blue Horizon Rocketry
		<i>* Indicates requirement for Space Warfighting Minor</i>			



DELTA 13 DET 1
FAIRCHILD 3F19

