



Promoting Cooperative Solutions for Space Sustainability

Beyond the Space Force

Prospects for Military Competition and Conflict in Space

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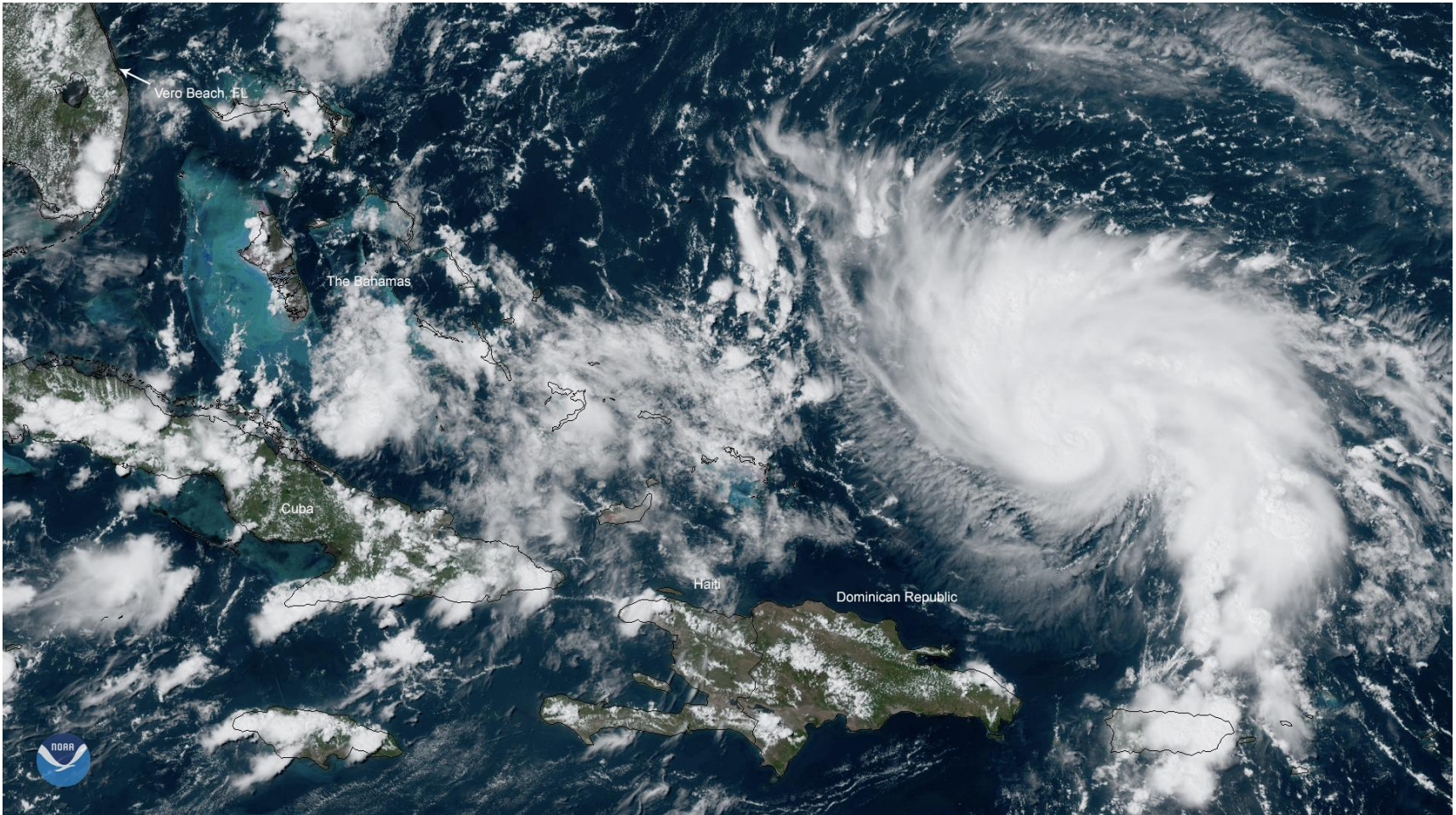
Secure World Foundation



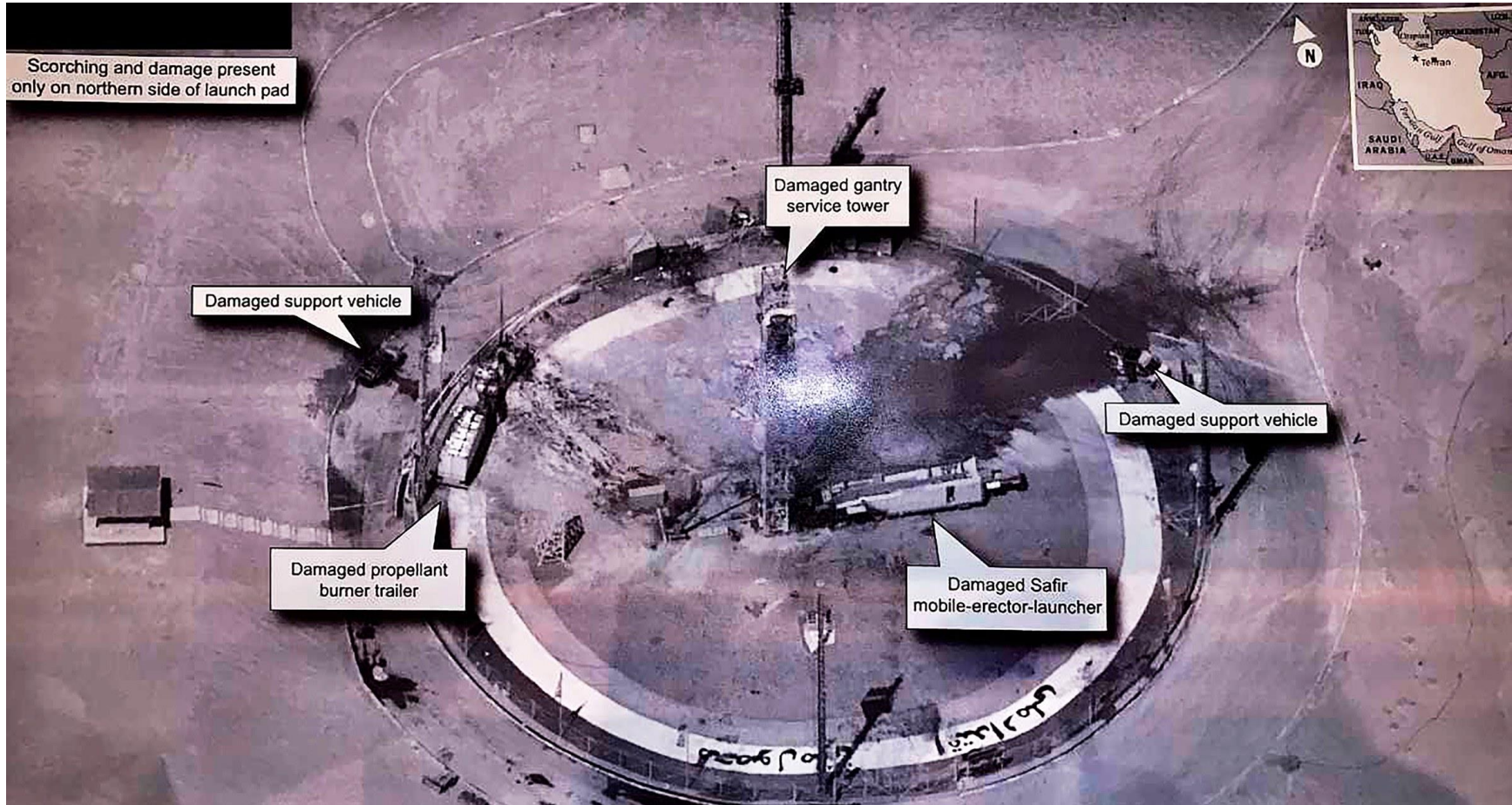
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Topics for tonight

- Why is outer space important for national security?
- What was our historical approach to military space?
- What changed?
- What are Space Command and Space Force?
- What are the big unanswered questions?



Hurricane Dorian as seen from a NOAA weather satellite
(Credit: [NOAA NESDIS](#))

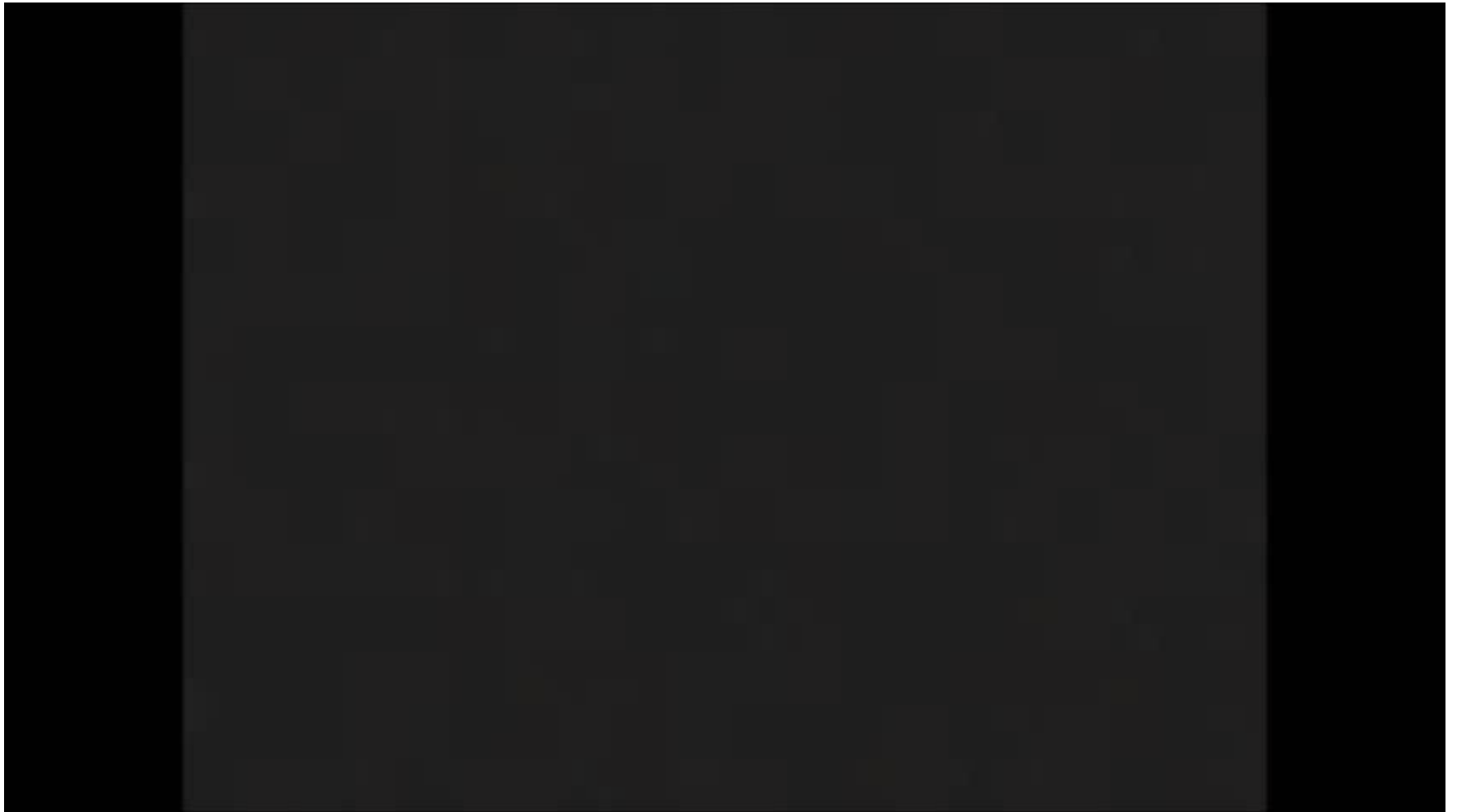


(Credit: @realDonaldTrump)

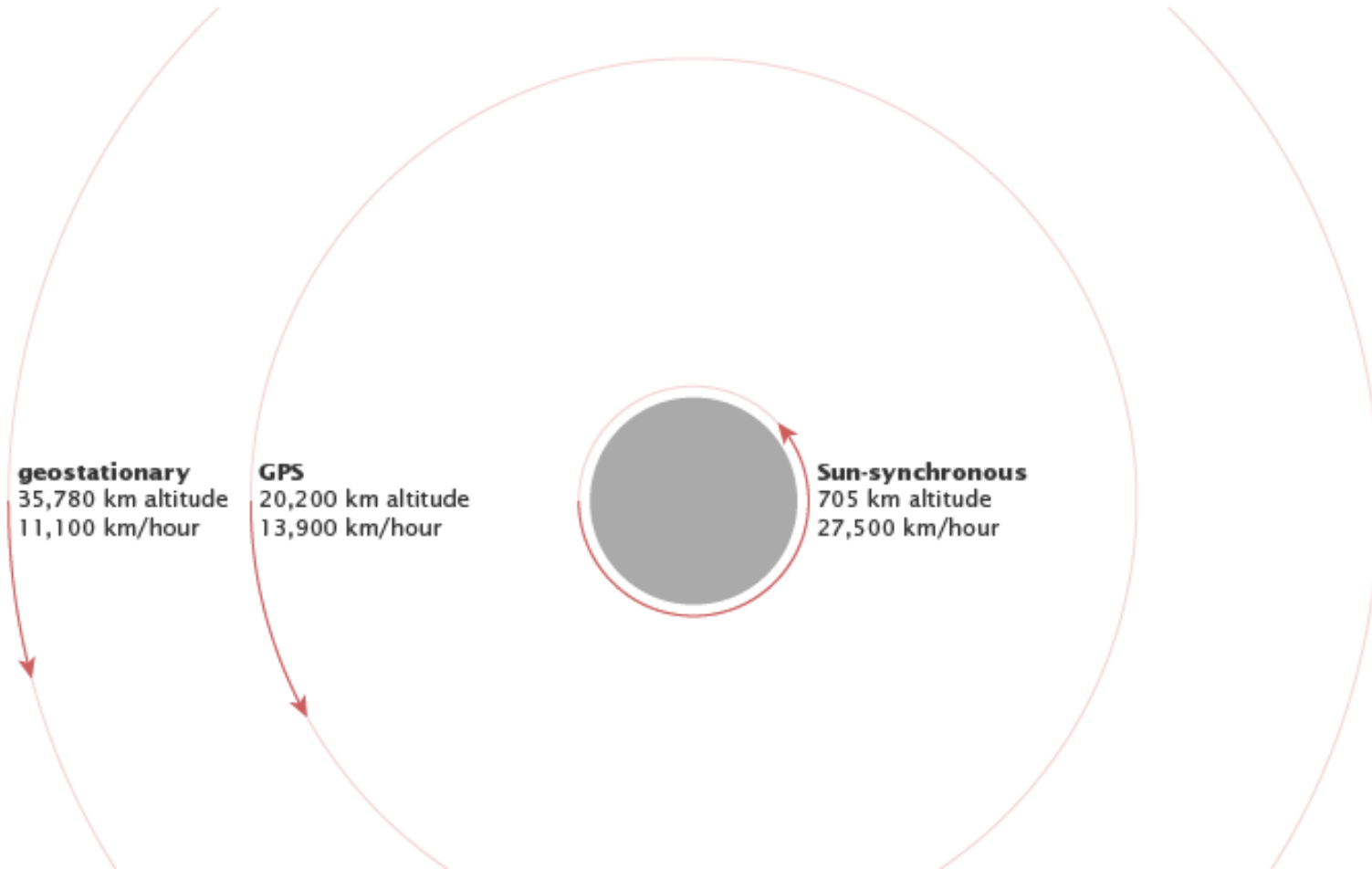


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Precision munitions



Satellite orbits



(Credit: [NASA](#))



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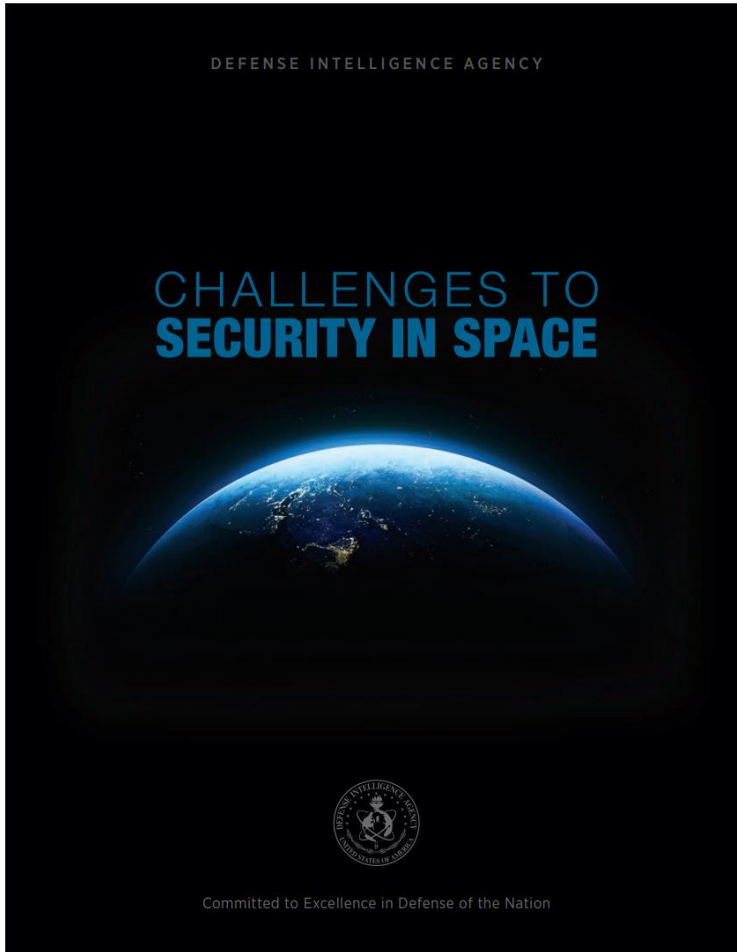
Brief history of space security policy

- 1950s-1960s
 - Hey, this space stuff would be useful for collecting intelligence on the Soviets
 - Also need to have a public face to show the world we're "peaceful"
- 1970s-1990s
 - Wow, this space stuff is really useful for making our military better and able to go anywhere in the world and do anything
- 2000s
 - We should think about future threats and challenges
 - 9/11
- 2010s
 - Those future threats are here, what do we do about them?

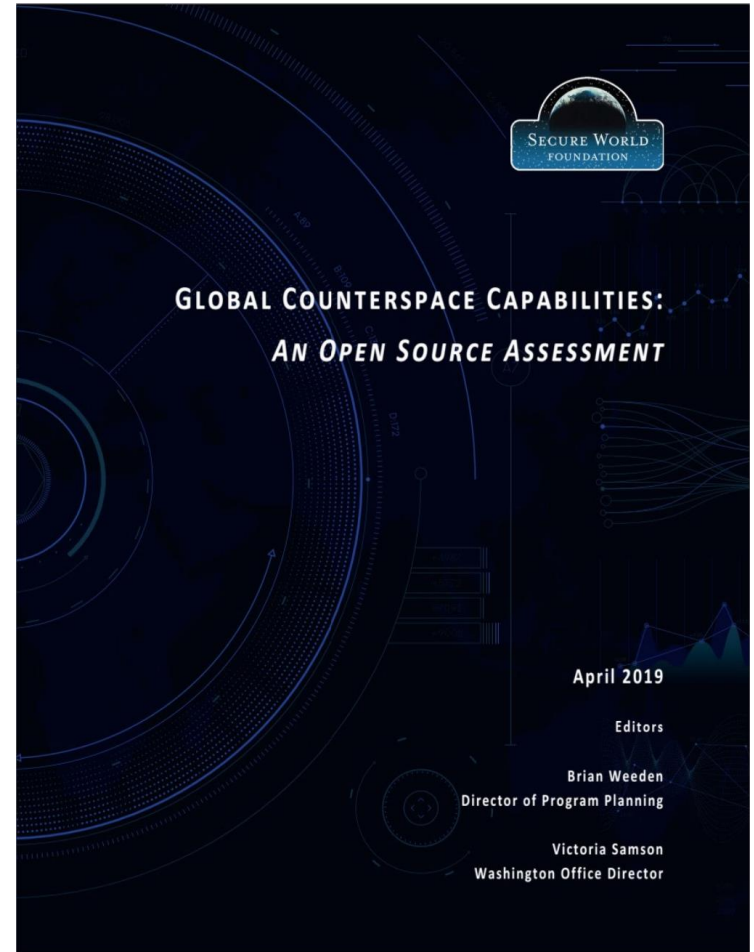


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Proliferation of counterspace threats



[2019 Defense Intelligence Agency Space Security Challenges Report](#)

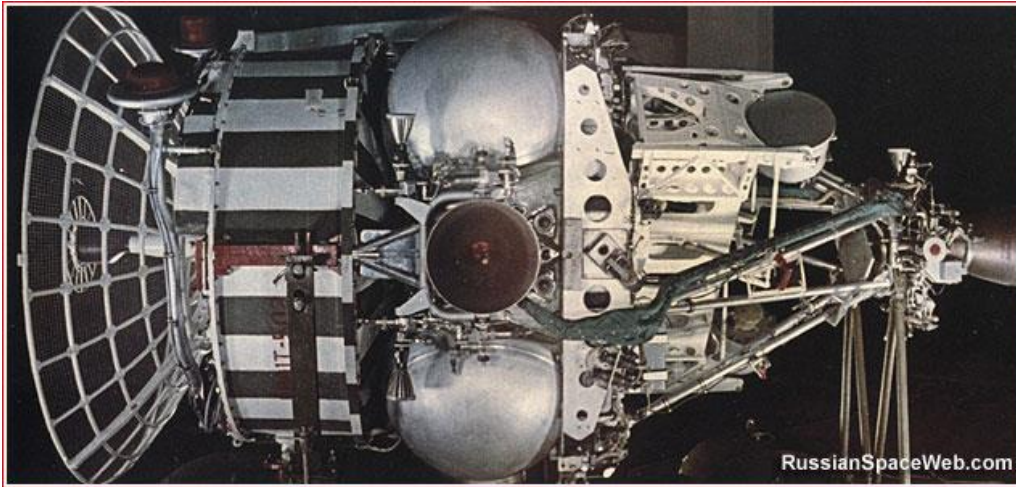


[2019 Secure World Foundation Counterspace Report](#)

World Affairs Council of Cincinnati and Northern Kentucky, October 9, 2019

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Many Ways to Attack Satellites



Soviet IS killer satellite (1960-1987)



*U.S. Air Force F-15
launching an ASM-135
ASAT missile (1978-1988)*

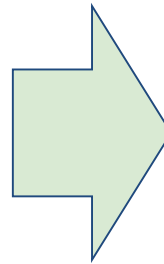


*Commercially-
available GPS
jammer (2014)*

Major trends in the space domain

Old Space Paradigm

- National
- Secret
- Military-led
- Independent
- Strategic



New Space Paradigm

- International
- Transparent
- Commercial-led
- Interdependent
- All levels of war

Space is becoming “normalized”

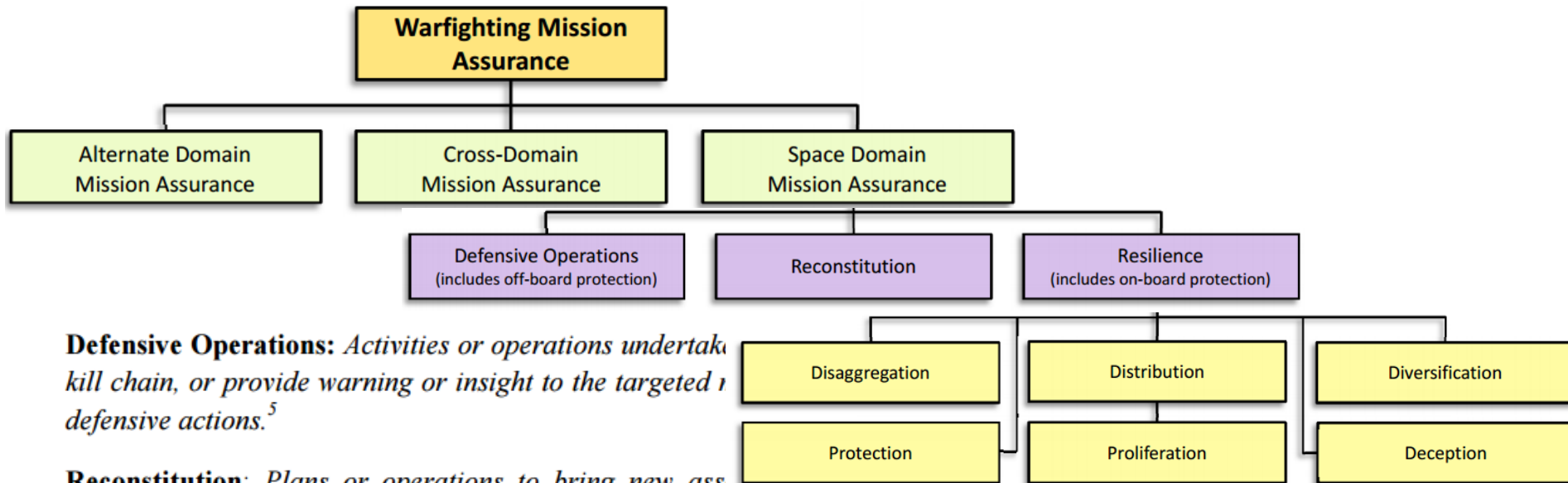


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Policy questions

- How should the ***US military be organized*** to meet the changing space domain and threat environment?
- What can be done to ***protect current space capabilities and deter attacks?***
- How can the U.S. ***accelerate the development of new capabilities and architectures*** to meet future threats?
- How does the ***globalizing/commercializing space domain*** impact U.S. response to space threats?

Focus on space mission assurance



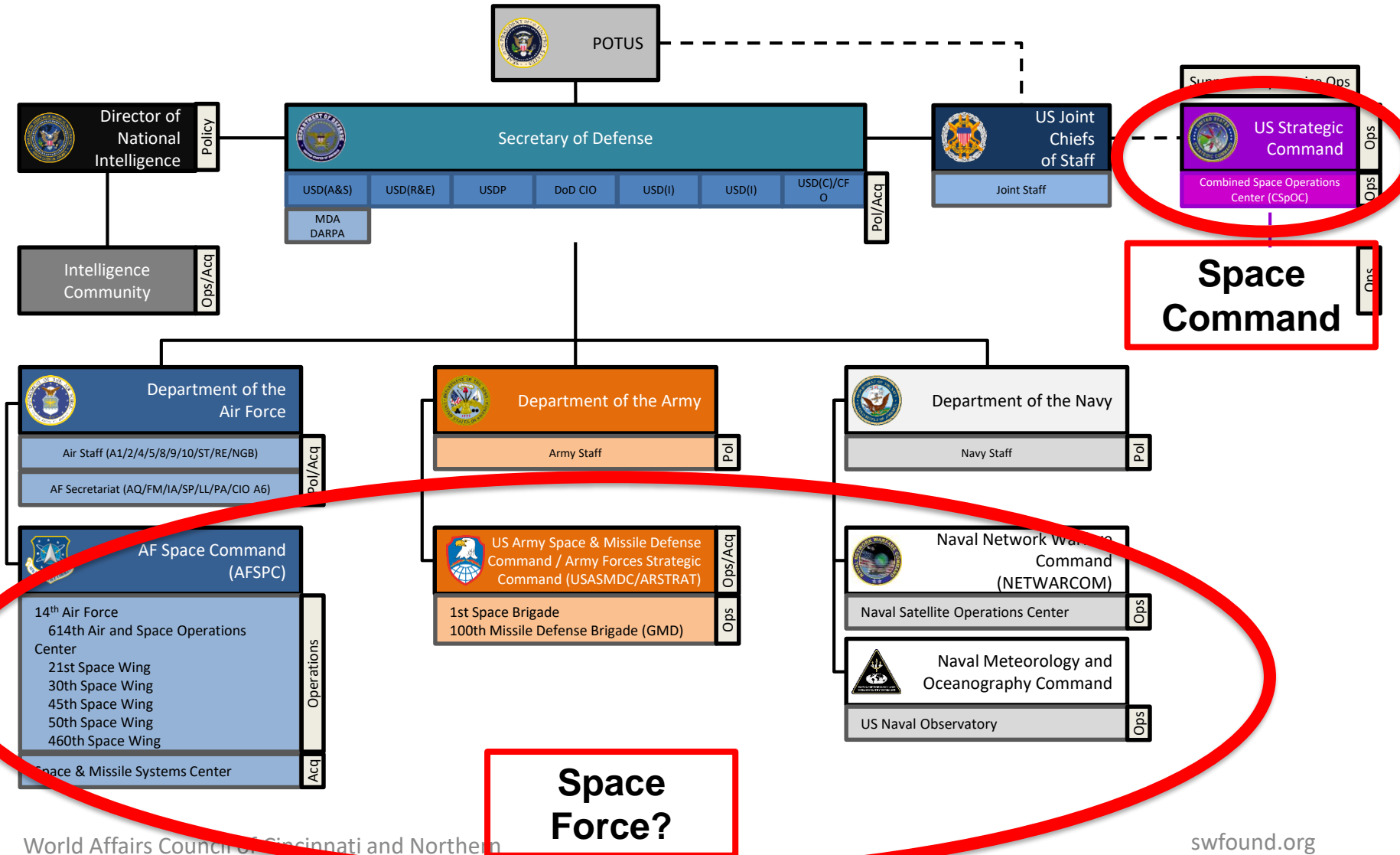
Defensive Operations: *Activities or operations undertaken to disrupt an adversary's kill chain, or provide warning or insight to the targeted party to enable defensive actions.*⁵

Reconstitution: *Plans or operations to bring new assets (e.g., replacement satellites or activating new ground stations) in order to replenish lost or diminished functions to an acceptable level for a particular mission, operation, or contingency after an attack or catastrophic event.*⁵

Resilience: *The ability of an architecture to support the functions necessary for mission success with higher probability, shorter periods of reduced capability, and across a wider range of scenarios, conditions, and threats, in spite of hostile action or adverse conditions [...].*⁶

Source: [Office of the Secretary of Defense \(2015\)](#)

Military space org chart



- Re-establish U.S. Space Command (USSPACECOM)
 - Previously existed from 1985-2002
 - Reassume space warfighter role from U.S. Strategic Command
 - Two main missions
 - Provide space forces to other combatant commands (INDOPACOM, EUCOM, CENTCOM, etc)
 - Detect threats to U.S. space assets and decide on a response
- Create U.S. Space Force
 - Trump: “separate but equal” Department of the Space Force
 - Pentagon: Space Corps within the Department of the Air Force (like Marines)
 - Congress: Space Corps within the Air Force but maybe call it a Space Force

Size of the Space Force

	Army	Navy	Marine Corps	Air Force ¹⁶	Coast Guard	Space Corps	Space Force-Lite	Space Force-Heavy
Discretionary Budget Authority (FY 2019)	\$182.1B	\$164.9B	\$29.2B	\$156.3B	\$11.7B	\$11.3B	\$13.4B	\$21.5B
Active Military	487,500	335,400	186,100	329,100	41,382	12,100	16,700	18,300
Guard / Reserve	543,000	59,100	38,500	177,100	-	1,600	1,900	2,800
Civilian ¹⁷	194,803	190,642	21,553	175,771	8,759	13,600*	17,200*	27,400*
Total Workforce (FY 2019)	1,225,303	585,142	246,153	681,971	50,141	27,300	35,800	48,500

* Includes headquarters/secretariat staff and civilian personnel

Todd Harrison “How much will the Space Force cost”? CSIS Press Briefing
<https://www.csis.org/analysis/how-much-will-space-force-cost>



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Unanswered questions about Space Force

- What will the primary mission of the Space Force / Space Corps be?
 - Space control (delivering space capabilities that support U.S. terrestrial warfighting) OR
 - High ground (dominance of space and conducting in-space activities)
- Will the Space Force/Corps be able to overcome bureaucratic inertia on space resilience?
- Will the U.S. develop a new slate of offensive counterspace capabilities?
- How does the globalizing/commercializing space domain impact U.S. response to space threats?



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Thank you! Questions?

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