

United States Space Weather Leadership: *Space Policy Implementation Through International Engagement*

Office of Space & Advanced Technology
(OES/SAT)

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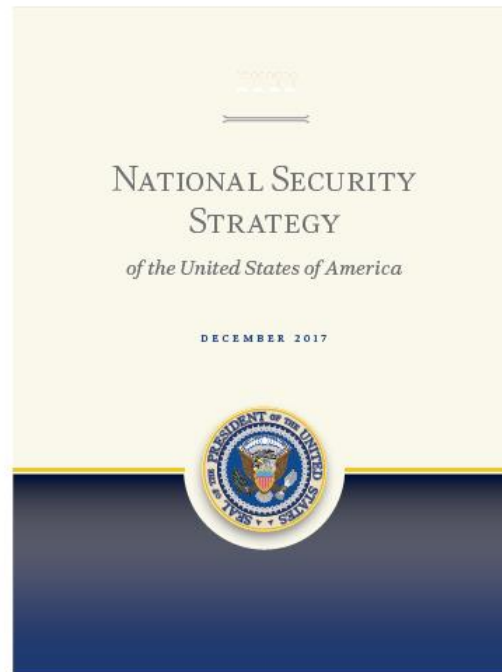
Bureau of Oceans and International Environmental and Scientific Affairs
Office of Space & Advanced Technology (OES/SAT)

National Security Strategy

OES/SAT Mission: Maintain American Leadership in Civil and Commercial Space and use space to advance U.S. foreign policy interests

“The United States must maintain our leadership and freedom of action in space.”

“America’s newly re-established National Space Council, chaired by the Vice President, will review America’s long-range space goals and develop a strategy that integrates all space sectors to support innovation and American leadership in space.”



“To enable human exploration across the solar system and to bring back to Earth new knowledge and opportunities, we will increase public-private partnerships and promote ventures beyond low Earth orbit with allies and friends.”

“The United States will simplify and update regulations for commercial space activity to strengthen competitiveness.”

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National Space Strategy Objectives

- Strengthen the safety, stability, sustainability of space activities as well as their resilience.
- Deter and, when necessary, defeat adversaries' space and counterspace threats that are hostile to the national interests of the United States and our allies.
- Partner with the U.S. commercial sector to ensure that American companies remain the leading providers of traditional and innovative space technologies, goods, and services on the international space market.
- Maintain and extend U.S. human presence and robotic exploration beyond earth to transform knowledge of ourselves, our planet, our solar system, and the universe.



Space Policy Directives – SPD's

- **Space Policy Directive 1 , December 11, 2017 – *Reinvigorating America's Human Space Exploration Program***
- **Space Policy Directive 2, May 24, 2018 - *Streamlining Regulations on Commercial Use of Space***
- **Space Policy Directive 3, June 18, 2018 - *National Space Traffic Management Policy***
- **Space Policy Directive 4, February 19, 2019 - *Establishment of the United States Space Force***
- **E.O. 13914 - *Encouraging International Support for the Recovery and Use of Space Resources***



Our Responsibility

- **The Secretary of State**, after consultation with the heads of appropriate departments and agencies, shall carry out diplomatic and public diplomacy efforts to strengthen understanding of, and support for, U.S. national space policies and programs and to encourage the foreign use of U.S. space capabilities, systems, and services



National Space Policy – International Cooperation (1)

- Departments and agencies, *in coordination with the Secretary of State*, shall:
 - Demonstrate U.S. leadership in space fora/activities
 - Lead in the enhancement of security, stability, and **responsible behavior** in space
 - Facilitate **new market opportunities** including commercially viable terrestrial applications that rely on government-provided space systems
 - Promote adoption of policies that facilitate **full, open, & timely access to government environmental data**
 - Promote appropriate **cost- and risk-sharing** among participating nations **in international partnerships**
 - **Augment U.S. capabilities** by leveraging existing and planned space capabilities of allies and space partners



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National Space Policy – International Cooperation (2)

- Space Exploration and Resource Utilization
- Space Science
- Commercial Space Oversight
- Responsible Behavior and Long-term Sustainability
- **Space Environment (Space Weather)**
- Earth Observation (remote sensing)
- Global Navigation Satellite Systems (GNSS)
- Satellite-based Search and Rescue
- Civil Maritime Domain Awareness



OES Functional Bureau Strategy

OES Mission Statement: Advance America's security and prosperity through international leadership on oceans, environment, science, space, and health.

OES Goal 3: Advance American Space Leadership

Objective 3.1: Pursue and maintain a rules-based international framework for the long-term sustainability, commercialization and utilization of space.

Objective 3.2: Strengthen American leadership in coalitions and bilateral engagements that extend human presence deeper into outer space for long-term exploration and utilization.

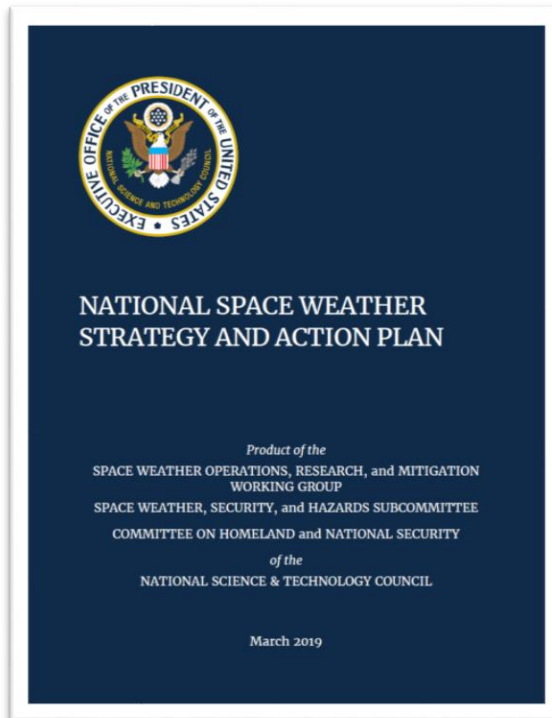


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National Space Weather Strategy and Action Plan

*“Space weather poses a constant threat to the Nation’s critical infrastructure, our satellites in orbit, and our **crewed and uncrewed space activities.**”*

*“Understanding and preparing for space weather events are critical to national security, the economy, infrastructure services, **remote sensing, space exploration,** and technology innovations that rely on communications systems and **GPS for positioning, navigation, and timing services.**”*



*“Achieving the objectives in this Strategy and Action Plan will require coordination and collaboration within and across the Federal Government, as well as engagement with the commercial sector, academia, and **like-minded nations.**”*

*“Preparing for space weather events is an important aspect of American resilience that bolsters national and homeland security and facilitates **continued U.S. leadership in space.**”*

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National Space Weather Strategy and Action Plan

2.8 Enhance accessibility and sharing of observational data across the stakeholder community. Increased access to government, civilian, and commercial space-weather observational infrastructure and data across the globe is of mutual benefit to the United States and its partners. Cross-sector and international cooperation in the observation and characterization of space weather events will enhance global preparedness.

2.10 Engage international partners to ensure space weather products and services are globally coordinated and consistent, as appropriate, during extreme events. As a leader in space, the United States will continue to work through international fora such as the United Nations Committee on the Peaceful Uses of Outer Space and the World Meteorological Organization to coordinate the consistent messaging and communication of space weather events. This action should include the potential development of international standards for exchanging space weather data.



National Space Weather Strategy and Action Plan

Progress toward our Actions in Major International Fora

COPUOS: Expert Group survey to Member States and International Organizations on implementation of relevant **Long-Term Sustainability Guidelines**.

WMO: Continued implementation of activities envisioned under the WMO "Four-Year Plan for WMO Coordination of Space Weather Activities 2020-2023".

ICAO: Space weather as a regulated service within ICAO commenced in November 2019 and three global space weather centers (ACFJ, PECASUS, and SWPC) provide space weather advisory services on a two-week rotational period.

CGMS: 2020 Risk Assessment concluded that the overall constellation with respect to space weather is very robust, but that there is a risk for the provision of operational services in the next decade for continuity of Coronagraph and Plasma Analyzer observations.

