



THE WHITE HOUSE

# Renewing America's Proud Legacy of Leadership in Space

*Activities of the National Space Council  
and United States Space Enterprise*

*Product of*

THE WHITE HOUSE

NATIONAL SPACE COUNCIL

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# Introduction: Restoring U.S. Leadership in Space

Space operations and capabilities have progressed significantly since the early years of the Space Age, and the rate of progress has only accelerated in the last decade. The United States is a global space power and, as an unprecedented number of spacefaring nations and private sector actors emerge, the nature of American leadership in space is evolving. The Trump Administration has risen to foster opportunities in, and meet challenges posed by, this rapidly changing domain. The U.S. presence in space has a multiplying effect on a cross-section of national interests, including the economy, national security, scientific advances, and foreign policy. Through the execution of whole-of-government space initiatives, the United States is leading yet again and achieving what others cannot while bringing likeminded partners with us.

The United States is more dependent than ever before on space capabilities for its national security and economic prosperity. In recognition of that reliance, the United States has applied a whole-of-government approach with the support of commercial and international partners to prioritize the space domain and restore a sense of purpose to the American space enterprise. The United States must continue to lead its allies, while dissuading malign competitors, in order to preserve and advance U.S. interests in space. In the words of President Donald J. Trump, “our destiny, beyond the Earth, is not only a matter of national identity, but a matter of national security.”

In order to be sustainable over the long term, U.S. efforts must align space policies, programs, and budgets with enduring national interests that span the political divide. Economic prosperity, national security, science, and foreign policy are all inherently affected by space activities, which provide both practical and symbolic benefits for the United States. The Trump Administration has prioritized national interests in the space domain in concert with core American values: democracy, freedom, the rule of law, and free markets. To advance U.S. national space power and make the world safer and more prosperous, American values must thrive on the next great frontier.



*President Donald J. Trump, joined by First Lady Melania Trump, Vice President Mike Pence, and Second Lady Karen Pence, signs a panel from an Orion crew capsule during a tour of NASA's Kennedy Space Center on May 27, 2020. (Official White House Photo by D. Myles Cullen.)*



President Donald J. Trump signs Executive Order 13803, Reviving the National Space Council in the Roosevelt Room of the White House on June 30, 2017. (Official White House Photo by Joyce Boghosian.)

## Reinvigoration of the National Space Council

On June 30, 2017, President Donald J. Trump revived the [National Space Council](#) for the first time in 24 years to “advise and assist the President regarding national space policy and strategy.”

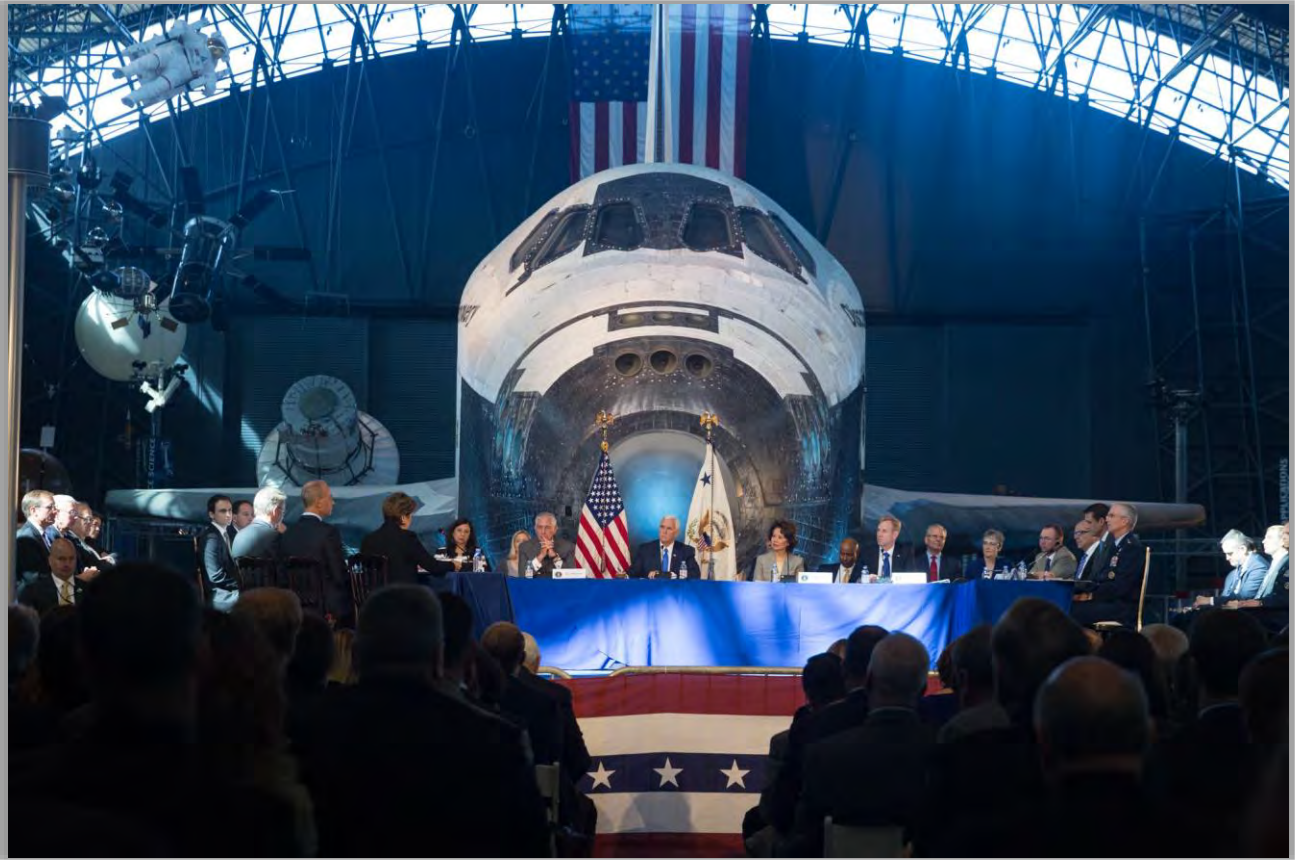
In particular, the Council is tasked with reviewing existing policy and providing policy recommendations to the President, fostering coordination and cooperation, among the U.S. civil, national security, and commercial space sectors, and advising on international space activities.

In addition to the Vice President, who serves as Chair, the National Space Council consists of the following members:

- Secretary of State
- Secretary of Defense
- Secretary of Commerce
- Secretary of Transportation
- Secretary of Energy\*
- Secretary of Homeland Security
- Director of National Intelligence
- Director of the Office of Management and Budget
- Assistant to the President for National Security Affairs
- Assistant to the President for Economic Policy\*
- Assistant to the President for Domestic Policy\*
- Administrator of the National Aeronautics and Space Administration
- Director of the Office of Science and Technology Policy
- Chairman of the Joint Chiefs of Staff

\*These members were added in February 2020 when the President signed an [Amendment to Executive Order 13803](#).





*Vice President Mike Pence chairs the First Meeting of the National Space Council at the Smithsonian National Air and Space Museum's Steven F. Udvar-Hazy Center in Chantilly, Virginia, on October 5, 2017. (Official White House Photo by D. Myles Cullen.)*

Between January 2017 and December 2020, the National Space Council convened eight meetings, chaired by the Vice President, to discuss Administration space policy priorities and adopt recommendations to the President for future policies and action.

The Council is supported by the [Users' Advisory Group \(UAG\)](#), a Federal Advisory Committee composed of senior leaders and subject matter experts from industry, academia, and other non-federal entities representing the broader space community. Members of the UAG are appointed to two-year terms. The first members were appointed in June 2018. New appointments and re-appointments were made in June 2020. Since its first meeting on June 19, 2018, the UAG has regularly convened to provide valuable input to the National Space Council.



*President Donald J. Trump and Vice President Mike Pence with members of the Users' Advisory Group on June 18, 2018, in the Blue Room of the White House. (Official White House Photo by Shealah Craighead.)*



*Vice President Mike Pence delivers remarks and chairs the Eighth Meeting of the National Space Council at NASA's Kennedy Space Center on December 9, 2020. (Official White House Photo by D. Myles Cullen.)*

## **The National Space Strategy**

In March 2018, the White House announced a new [National Space Strategy](#), which emphasizes peace through strength in the space domain to protect America's unfettered access to and freedom to operate in space. It highlights a dynamic and cooperative interplay between the national security, commercial, and civil space sectors to strengthen American interests in space.

The National Space Strategy prioritizes regulatory reforms to unleash American industry and partnerships through the commercial sector to ensure that American companies remain world leaders in space services and technology, and it ensures that international agreements bolster the interests of American workers and businesses.

The strategy harnesses the American spirit of exploration, builds on its spacefaring tradition, and lays the groundwork for the next generation of American explorers by establishing a new approach for leadership in space.

## **The National Space Policy**

Recognizing the rapidly evolving space domain, the National Space Council reviewed and updated the existing 2010 National Space Policy to better reflect current and future U.S. space priorities. The [2020 National Space Policy of the United States](#) was released on December 9, 2020, at the Eighth Meeting of the National Space Council. The policy reemphasizes space policy directives and provides additional direction to relevant departments and agencies for the Nation's future use of space to the benefit of not only



Americans, but all humanity. It provides a comprehensive framework that accounts for new realities in space, including the advancement of private sector capabilities, a greater number of space actors, and new and more diverse threats.

The new National Space Policy promotes the acceleration of space commercialization, encourages responsible behaviors in space, endorses greater international cooperation on mutually beneficial activities, and increases assurance of U.S. essential functions in space. The policy prioritizes the extension of U.S. economic activity into deep space to increase the quality of life for all humanity by developing space-enabled benefits and the preservation of American leadership in a new and boundless frontier.



*Vice President Mike Pence looks on as Dr. Scott Pace, Executive Secretary of the National Space Council, presents the updated National Space Policy at the Eighth Meeting of the National Space Council at NASA's Kennedy Space Center on December 9, 2020. (Official White House Photo by D. Myles Cullen.)*



*Vice President Mike Pence briefs President Donald J. Trump and members of the Cabinet in the Cabinet Room of the White House on March 8, 2018. (Official White House Photo by D. Myles Cullen.)*



*Vice President Mike Pence announces the names of the first cadre of astronauts for NASA's Artemis Program at NASA's Kennedy Space Center on December 9, 2020. (Official White House Photo by D. Myles Cullen.)*

## Civil Space Highlights: A Renewed Commitment to Exploration and Discovery

The United States is instilled with a sense of exploration and discovery which forms the bedrock of American culture. This fundamental spirit to explore is manifested in the Nation's civil space program, which harnesses the tremendous resources of the United States to advance human achievement. At its core, America's civil space program is an instrument of national power, with the power to promote science, economic, foreign policy, and national security goals. President Donald J. Trump recognized civil space expenditures have an outsized return on investment for the nation, and has championed civil space priorities during this administration.

In addition to elevating public awareness of the mission and achievements of NASA, the National Space Council leveraged the broad array of government expertise at the Departments of State, Defense, Commerce, Transportation, and Energy to strengthen and expand the Nation's civil space enterprise.



*Vice President Mike Pence and Apollo 11 astronaut Buzz Aldrin at the commemoration of the 50<sup>th</sup> anniversary of Apollo 11 at NASA's Kennedy Space Center on July 20, 2019. (Official White House Photo by Andrea Hanks.)*





*Vice President Mike Pence chairs the Sixth Meeting of the National Space Council at the Smithsonian National Air and Space Museum's Steven F. Udvar-Hazy Center in Chantilly, Virginia, on August 20, 2019. (Official White House Photo by Tia Dufour.)*

The policy, program, and resource decisions of the Trump Administration have set the United States on a course to continue its global leadership in space exploration and discovery.

## Returning to Deep Space

To date, only twelve humans have walked on the lunar surface. All of them have been Americans. However, nearly a half-century has passed since humans last ventured into deep space. Since the end of the Apollo Program, the United States has sent robotic spacecraft to Mars, the outer planets, and even into interstellar space, but humans have remained in low-Earth orbit.

The Trump Administration has adopted bold goals for the U.S. human exploration program, including prioritizing a U.S.-led return to the lunar surface, this time to stay. At the first

meeting of the National Space Council on October 5, 2017, the Council adopted a recommendation to the President to provide clear guidance and direction for NASA's human exploration program, amending the drift of previous Administrations.



*NASA astronaut Matthew Dominick high-fives fellow astronaut Jasmin Moghbeli during the 2017 NASA Astronaut Class Announcement on June 7, 2017. (Official White House Photo by D. Myles Cullen.)*



*Vice President Mike Pence chairs the Fifth Meeting of the National Space Council at the U.S. Space and Rocket Center in Huntsville, Alabama, on March 26, 2019. (Official White House Photo by D. Myles Cullen.)*

This recommendation paved the way for the first Space Policy Directive on December 11, 2017. [Space Policy Directive 1](#) (SPD-1), Reinventing America's Human Space Exploration Program, states that the United States will:

“Lead an innovative and sustainable program of exploration with commercial and international partners to enable human expansion across the solar system and to bring back to Earth new knowledge and opportunities. Beginning with missions beyond low-Earth orbit, the United States will lead the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations.”

The Vice President and the members of the National Space Council expanded on this directive at the Council’s fifth meeting on March 26, 2019, in Huntsville, Alabama. At this meeting, the Council unanimously adopted a series of recommendations, including a recommendation to [expedite the return of U.S. astronauts to the lunar surface](#) by sending the first American woman and next American man

to the Moon by 2024. The recommendation states:

“Consistent with the overall goals of SPD-1, the United States will seek to land Americans on the Moon’s South Pole by 2024, establish a sustainable human presence on the Moon by 2028, and chart a future path for human Mars exploration. NASA’s lunar presence will focus on science, resource utilization, and risk reduction for future missions to Mars.”



*President Donald J. Trump, alongside Ivanka Trump and NASA astronaut Kate Rubins, speaks with NASA astronauts Peggy Whitson and Jack Fischer aboard the International Space Station, in the Oval Office on April 24, 2017, to congratulate Commander Whitson for breaking the record for most time in space of any American astronaut. (Official White House Photo by Benjamin Applebaum.)*





*President Donald J. Trump, First Lady Melania Trump, Vice President Mike Pence, and Second Lady Karen Pence in front of the Orion capsule at NASA's Kennedy Space Center on May 27, 2020. (Official White House Photo by Andrea Hanks.)*

These bold goals were carried forward in the President's Budget Requests, which have resulted in some of the largest NASA budgets since the Apollo Program in the 1960s. Through the Artemis Program, NASA is developing its mission architecture, commercial and international partnerships, and budget requests to ensure the proper resources and programs are in place for sending humans to the surface of the Moon.

The Trump Administration has begun wide-ranging initiatives at NASA and elsewhere in the Federal Government to enable NASA to accomplish the lunar surface return on time and by any means necessary. While the Apollo Program was a Cold War race for prestige against the Soviet Union, the Artemis Program represents a recognition of today's challenges of international and economic leadership. This time, when the United States returns to Moon, it will be leading precisely because it will not be

returning alone. The return to the Moon and journey to Mars will serve the interests of the American people, create a more stable and secure space domain, and ensure that U.S. values and the values of its allies guide humanity's future in space.

The National Space Council convened for a sixth meeting on August 20, 2019, in Chantilly, Virginia, focusing on the directive for NASA to send a crewed mission to the lunar surface by 2024 and establish a sustained presence as a proving ground for crewed missions to Mars. This meeting addressed measures necessary to reform the space sector and highlighted innovative technologies that will expedite deep space exploration efforts. The Council voted on recommendations related to space nuclear power, exploration, international cooperation, commercial space and industrial base issues, and acquisition and workforce reform at NASA to enhance U.S. space capabilities.





*Vice President Mike Pence delivers remarks personnel and guests at NASA's Langley Research Center on February 19, 2020. (Official White House Photo by D. Myles Cullen.)*

To preserve U.S. heritage in space, the Office of Science and Technology Policy issued a report on [Protecting and Preserving Apollo Program Lunar Landing Sites and Artifacts](#) in March 2018. This report outlines the global significance of the Apollo Program, and its cultural, scientific, and technological impact more than 50 years later and underlines the importance of the sites as a means to ensure this heritage is accessible to future generations. On July 20, 2019, people all around the globe commemorated humanity's first steps on another world during the celebrations surrounding the 50<sup>th</sup> anniversary of the Apollo 11 lunar landing.

## **Advancing Nuclear Power in Space**

The ability to use space nuclear systems safely and sustainably is vital to maintaining and

advancing U.S. leadership in space. At the recommendation of the National Space Council, on August 20, 2019, the President issued a new National Security Policy Memorandum to streamline the process of launching nuclear material for use in space exploration. [The Presidential Memorandum on Launch of Spacecraft Containing Space Nuclear Systems](#) establishes processes for transparent safety guidelines that are forward-looking and amenable to effective use of space nuclear systems for heating, power, and propulsion.

In acknowledgement of the importance of nuclear power for space activities, the President issued Space Policy Directive 6 (SPD-6), the [National Strategy for Space Nuclear Power and Propulsion](#), on December 16, 2020. This directive defines mission-enabling

objectives to advance the use of nuclear power in space activities, such as increasing uranium fuel processing capabilities, demonstrating fission power systems on the surface of the Moon, establishing the technical foundations and capabilities for in-space nuclear propulsion, and developing advanced radioisotope power systems. Additionally, President Donald J. Trump signed an [Executive Order on Promoting Small Modular Reactors](#) for National Defense and Space Exploration to maintain and advance U.S. leadership across space and terrestrial domains while adhering to nuclear nonproliferation and safety standards.

## Fostering Scientific Discovery

Learning how to live and work beyond the Earth and making new scientific discoveries requires innovation and mastery of a vast range of scientific and engineering disciplines. By exploring the universe, the United States is creating new opportunities in space and solutions for problems here on Earth.

NASA has continued to launch and operate flagship science missions to better understand the universe and humanity's place in it.

- On May 5, 2018, the robotic lander InSight was launched, and on November 26, 2018, it landed on the surface of Mars. InSight has since conducted a series of experiments to study the planet's interior and seismic activity.
- On August 12, 2018, the Parker Solar Probe was launched to investigate the sun and solar wind in order to predict effects on Earth with greater accuracy. With a speed measured in hundreds of thousands of miles per hour, the probe is currently the fastest-ever human-made object by a factor of more than two and has come closer to the sun than any spacecraft in history.
- On July 30, 2020, the rover Perseverance was launched with several scientific instruments and the helicopter Ingenuity

onboard to conduct the first powered flight on another world. The nuclear-powered rover will land on the surface of Mars in February 2021, where it will collect samples, study the planet to identify its ability to support life, search for signatures of biological activity, and provide data that will be helpful for future crewed missions to the Martian surface.

- On October 20, 2020, after a more than 200 million mile journey that lasted more than four years, the spacecraft OSIRIS-REx briefly touched down on the asteroid Bennu, to collect a sample and return it to Earth. The samples are expected to return for analysis in 2023.

Through the Office of Science and Technology Policy and the National Science and Technology Council, important strategies have been developed to better characterize and mitigate risks associated with natural hazards originating in space or through space exploration. On June 20, 2018, the National Science and Technology Council released the [National Near-Earth Object Preparedness Strategy and Action Plan](#) to improve the ability to address the hazards of impacts by large space objects such as asteroids. The strategy seeks to enhance the understanding of Near-Earth Objects, develop technologies to avoid potential impact, increase international cooperation, and strengthen emergency procedures. On March 26, 2019, the National Science and Technology Council released the [National Space Weather Strategy and Action Plan](#) to increase resilience of U.S. systems by enhancing the protection of infrastructure and assets, developing and disseminating critical data, and planning for response and recovery related to space weather events.

To protect the Earth and other planetary bodies from potentially harmful biological contamination from space exploration, on December 30, 2020, the National Space Council





*President Donald J. Trump speaks with NASA astronauts Christian Koch and Jessica Meir via satellite uplink during the first ever all-female spacewalk in the Roosevelt Room of the White House on October 18, 2019. (Official White House Photo by Joyce Boghosian.)*

released the [National Strategy for Planetary Protection](#). The strategy guides implementation of direction from the National Space Policy to develop objectives related to planetary protection in a manner that balances the Nation’s interests in safety, scientific discovery, human exploration, and commercial activity in space.

To ensure that America’s continued leadership in space is supported in the federal budget, the Office of Management and Budget and Office of Science and Technology Policy included “American Leadership in Space” and “Exploration and Commercialization” among the Nation’s Research and Development Budget Priorities for fiscal years [2020](#), [2021](#), and [2022](#). These memoranda cited microgravity, in-situ resource utilization, cryogenic fuel storage and management, in-space manufacturing and

assembly, advanced space-related power and propulsion capabilities, and orbital debris management among specific areas of interest.



*A United Launch Alliance Atlas V rocket with NASA’s Mars 2020 Perseverance rover onboard launches from Cape Canaveral in Florida on Thursday, July 30, 2020. (NASA Photo by Joel Kowsky.)*





*Vice President Mike Pence delivers remarks at the International Astronautical Conference at the Walter E. Washington Convention Center in Washington, D.C., on October 21, 2019. (Official White House Photo by D. Myles Cullen.)*

## **International Cooperation in Space: Leading for the Benefit of Humankind**

In the 1960s, leadership in space meant achieving what other nations could not. As the United States returns to deep space, it will not be alone, but with international partners. By leading again, the United States will create a better world with other spacefaring nations who share common values. The United States has continued to lead and strengthen its international partnerships to preserve and sustain space for future activity to benefit of all nations and all people. In this modern era of leadership in space, the United States is blazing a trail with international partners who provide

unique capabilities to ensure the success of mutually beneficial missions.

In a world with more global space actors than ever before, serious and growing counterspace threats, and greater private sector capabilities, the United States must continue to provide indispensable international leadership crucial to space security and commerce. To do so, America must shape the best practices in space to reflect and support U.S. values and interests. The rules on every new frontier are made by those who show up and have the conviction to stay, not by those who remain behind.

### **Increasing Collaboration with International Partners**

In 2019, Washington, D.C. was the host city for two of the world's largest space industry conferences. To lead U.S. Government

outreach to the international space community, Vice President Mike Pence delivered remarks at the [SATELLITE 2019 Conference](#) and the [International Astronautical Congress](#). This visible leadership was amplified by the involvement of other senior U.S. Government leaders, resulting in major progress to advance international cooperation efforts.

Discussions with international partners are continuing for the Artemis Program and other space exploration efforts, such as the memorandum of understanding between NASA and the European Space Agency to collaborate on the Artemis Gateway – a planned platform designed to orbit the Moon for crew habitation, research, technology demonstration, and logistics. The United States and Canada also formalized an agreement for contributions to Artemis in the form of Canadian robotics systems in exchange for crew opportunities for Canadian astronauts aboard the Gateway.

Australia was one of the first nations to signal its intent to participate in the Artemis Program. On September 21, 2019, Australian Prime Minister Scott Morrison participated in a ceremony at NASA Headquarters with other senior U.S. and Australian officials to sign a statement of intent to cooperate in deep space exploration, triple the Australian Space Agency budget, and invest over \$100 million in its own private space sector over a five year period. Cooperative agreements with New Zealand and facilities operated by the U.S. commercial company Rocket Lab have enabled the launch of U.S. Government and commercial payloads from the Mahia Peninsula, including the successful launch of a National Reconnaissance Office satellite on June 13, 2020.

Japan continues to be a valued strategic partner for the United States in all areas of space cooperation and delegations of senior leaders from the United States and Japan

continue to meet for an annual comprehensive dialogue on space, first held in 2013 in Tokyo, Japan. The dialogue alternates between Washington, D.C. and Tokyo each year.

On May 27, 2019, as part of the Japan-U.S. Summit in Tokyo, Prime Minister Shinzo Abe and President Donald J. Trump agreed to dramatically expand U.S.-Japan cooperation in human space exploration through the U.S.-led Artemis Program. The agreement was the culmination of years of increased cooperation between the United States and Japan in space science, space security, commercial space, and human spaceflight. On November 15, 2020, Japanese astronaut Soichi Noguchi became the first international member of NASA's Commercial Crew Program when he launched with American astronauts from Kennedy Space Center. On December 15, 2020, the United States and Japan signed an agreement to launch one hosted payload on Japan's Quasi-Zenith Satellite System. Finally, on December 28, 2020, the United States and Japan signed an agreement for cooperation on the Artemis Gateway.



*President Donald J. Trump participates in an expanded bilateral meeting with Japan's Prime Minister Shinzo Abe Monday at the Akasaka Palace in Tokyo on May 27, 2019. (Official White House Photo by Shealah Craighead.)*





*NASA Administrator Jim Bridenstine speaks with the heads of international space agencies at the 2019 International Astronautical Congress in Washington, D.C. (Official NASA Photo: Aubrey Gemignani.)*

On July 27, 2020, officials from the Departments of State, Defense, and Energy, as well as the National Security Council, met with Russian Federation officials in Vienna, Austria, for a Space Security Exchange under the framework of the Strategic Security Dialogue, the first of its kind in seven years.

Additionally, the United States is developing and growing its space cooperation and economic development with nations that are interested in improving their infrastructure and boosting their economies using space services, such as communications, position, navigation and timing, and remote sensing. Through the use of existing structures such as the Export-Import Bank and the Development Finance Corporation, the Trump Administration began important work to improve the competitiveness of U.S. companies in international developing markets, while also countering foreign anti-competitive practices.

Since April 2017, twenty countries were able to operate their first satellite. Of those twenty, the United States and its space industry were responsible for launching twelve: Guatemala, Sri Lanka, Nepal, Jordan, Bhutan, Kenya, Costa Rica, New Zealand, Mongolia, Ghana, Bangladesh, and Finland. In that timeframe, while there were nearly a dozen nations and space agencies in the world capable of orbital launch, no other country was responsible for launching a “first satellite” for more than two nations.

### **Establishing Best Practices for the Sustainable Use of Space**

Noting the importance of international partnerships for the Artemis Program, the [Artemis Accords](#) were drafted as a means to reaffirm the United States commitment to the Outer Space Treaty of 1967 and outline principles for cooperation in the peaceful exploration of space.



On October 13, 2020, seven partner spacefaring nations were announced as initial signatories of the Accords: Australia, Canada, Italy, Japan, Luxembourg, the United Arab Emirates, and the United Kingdom. The Accords represent a shared vision for principles grounded in the Outer Space Treaty to create a safe and transparent environment which facilitates exploration, science, and commercial activities for all of humanity.

As the Nation once again sets its sights on the exploration of deep space, the use of space resources, such as those found on the lunar surface, will propel the next great American odyssey. In addition to its necessity for long-term sustainability of human exploration, creation of policy that supports the recovery and use of space resources is vital for a stable and predictable investment environment for commercial space innovators and entrepreneurs. For these reasons, President Donald J. Trump issued an Executive Order on “[Encouraging International Support for the Recovery and Use of Space Resources](#)” on April 6, 2020. The Executive Order addresses U.S. policy regarding resources in outer space and affirms the intent of Congress that Americans should have the right to engage in commercial exploration, recovery, and use of space resources.

This Executive Order will benefit American industry and the industries of likeminded countries through the establishment of stable international practices that expand the American economic sphere beyond the Earth. By expressly rejecting the failed 1979 Moon Agreement and reiterating the inherent right to explore and use space resources, the United States is promoting space activities that will drive humankind’s sustainable presence in space. On December 3, 2020, [NASA selected four commercial companies](#) that will collect regolith from the surface of the Moon and transfer ownership of the material to NASA, a

key milestone in establishing a precedent for commercial activity in space.

Additionally, to encourage the adoption of new norms of behavior and best practices for space operations by the international community, the United States played a leading role in the [adoption](#) of a consensus preamble and 21 guidelines to improve the long-term sustainability of outer space activities at the 62<sup>nd</sup> session of the United Nations Committee on the Peaceful Uses of Outer Space (COPUOS) in June 2019.

The [Guidelines for the Long-term Sustainability of Outer Space Activities](#) were largely based on existing U.S. Government and industry best practices in areas such as space debris mitigation and management, improved space situational awareness, and operating standards and open lines of communications for orbital operations.



*Vice President Mike Pence plants a Moon Tree in honor of Apollo 14 Command Module Pilot Col. Stu Roosa at the Vice President’s Residence in Washington, D.C., on November 8, 2019. The Vice President is joined by Rick Armstrong, son of Apollo 11 astronaut Neil Armstrong, Apollo 11 astronaut Buzz Aldrin, and Rosemary Roosa, daughter of Col. Stu Roosa. (Official White House Photo by Andrea Hanks.)*



*NASA's Orion spacecraft, produced by prime contractor Lockheed Martin, is seen on the South Lawn of the White House on July 22, 2018. (Official NASA Photo by Joel Kowsky.)*

## Commercial Space Highlights: The Flag of Choice

One of the great distinctions between the United States and other spacefaring nations is the size and capability of the American commercial space sector. Private industry initiatives and entrepreneurialism represent a significant strategic advantage. For example, the United States has long benefited from commercial space innovations in areas such as space-based positioning, navigation, and timing (PNT), space launch, remote sensing, and satellite communications.

Commercial entities are now creating new opportunities in domains such as space tourism, lunar payload delivery services, on-orbit servicing and manufacturing, in-situ resource utilization, and revolutionary spaceflight systems. The U.S. Government is

now a customer of this new generation of privately developed and operated space systems, which transport astronauts, increase the amount of scientific research performed in space, observe and interpret events on Earth, augment existing products and services, and otherwise benefit life on Earth.

This Administration has prioritized the growth of the commercial space sector and empowered entrepreneurial leaders and highly skilled workforce to innovate at a pace otherwise unachievable. The removal of undue regulatory burdens has led to increased investment and growth in the number of space businesses operating in the United States. Commercially available technologies are now competitive options for government procurement, rather than continuing the reliance on government-built systems. The American public is benefiting from cutting-edge capabilities while supporting the U.S. industrial base.





*Vice President Mike Pence and Second Lady Karen Pence watch the launch of NASA's SpaceX Crew-1 Mission at NASA's Kennedy Space Center on November 15, 2020. (Official White House Photo by Delano Scott.)*

## **Unleashing the U.S. Space Industry**

Since 2017, this Administration has continued to remove undue barriers to unleash American industry in space, including increasing collaboration with commercial partners and developing a workforce capable of sustaining that leadership for generations. Policy at a national level has mirrored the growing opportunities made possible through the commercial sector, which has offered more agile and innovative space capabilities. Modernized legal and regulatory frameworks are critical to facilitate American entrepreneurship and inspire a new generation to embrace the challenges of space exploration and development. Significant achievements have been stimulated through regulatory

reforms that support more entrepreneurial space activities, the effects of which will be felt for decades to come.

At the second meeting of the National Space Council, held at NASA's Kennedy Space Center on February 21, 2018, the Council adopted recommendations to streamline the commercial space regulatory framework at the Departments of Commerce and Transportation. In response to these recommendations, the President signed [Space Policy Directive 2](#) (SPD-2) to:

- Transform the launch and re-entry licensing regime to better reflect the higher cadence of launches and modern space transportation systems brought forth by advances in the American commercial space sector.
- Direct the elevation of the Office of Space

Commerce within the Department of Commerce, streamline the commercial remote sensing operations licensing regime, and address regulatory complexities to promote new commercial space activities and enable the rapid, efficient, and predictable permitting of those activities.

- Ensure the protection and stewardship of radio frequency spectrum necessary for commercial space activities without adversely affecting national security or public safety, and develop, advocate, and implement spectrum management policies that make U.S. space-related industries more competitive globally.
- Initiate a policy review of the current export licensing regulations affecting commercial space activity and develop recommendations to streamline regulatory requirements.

The implementation of SPD-2 required various departments and agencies to streamline regulatory requirements to ensure that there are no undue barriers to the acceleration of commercial space activities. Accordingly, the Departments of Commerce and Transportation released new regulations to improve the licensing process for private activities, helping ensure continued U.S. leadership in a critical commercial space industry.

The new rule for [Licensing of Private Remote Sensing Space Systems](#) was published on May 20, 2020, to increase openness and transparency in the licensing process, eliminate most restrictions on how licensed remote sensing systems may be operated, and prohibit the government from imposing additional conditions after a license has been issued. In doing so, the rule requires the U.S. Government to assess remote sensing data sources already planned or available in the global market to determine whether any conditions should be applied to U.S. licensees. The Department of

Commerce also sent a legislative proposal to Congress to provide flexibility in the Office of Space Commerce, increase its budget to support its mandate, and reorganize and elevate the Office of Space Commerce to report directly to the Secretary of the Commerce. In order to authorize and supervise new private sector capabilities, such as on-orbit servicing and in-situ resource utilization, the Department of Commerce and other government agencies will need to continue to adapt their responsibilities accordingly.

On October 15, 2020, the Department of Transportation announced the publication of the Federal Aviation Administration's [Streamlined Launch and Reentry Licensing Requirements](#) for commercial launches, which removes outdated and burdensome barriers on space transportation companies. The final rule consolidates, updates, streamlines, and increases the adaptability of all launch and reentry regulations by proposing a single, partially performance-based rule. This new licensing regime will allow the United States to accelerate its remarkable cadence of successful orbital and interplanetary launches, which hit 40 in 2020, including three by the U.S. commercial company, Rocket Lab, in New Zealand. This marks our highest total since 1969 and more than any other country in over two decades. This Administration has championed the reuse of launch vehicles, with more than 50 orbital and suborbital reflights occurring since the first successful reflight of a commercial orbital first stage by SpaceX on March 30, 2017.

Similarly, the United States nearly tripled its number of satellites in orbit in just four years and can now claim more than half of the world's operational satellites, as opposed to only a third in 2016. The share of U.S. satellites in orbit will continue to grow, as the first licenses have now been issued for commercial mega-constellations with satellites numbering in the





*President Donald J. Trump signs Space Policy Directive 3 at the Third Meeting of the National Space Council in the East Room of the White House on June 18, 2018. (Official White House Photo by Shealah Craighead.)*

thousands. New technological advancements are not only increasing the number of American satellites, but prolonging the operational life of satellites already in orbit. Between February 25, 2020, and April 2, 2020, Northrop Grumman's Mission Extension Vehicle 1 became the first spacecraft to rendezvous with, service, and reposition another satellite to extend its useful life.

At the second meeting of the National Space Council, held at NASA's Kennedy Space Center on February 21, 2018, the Vice President tasked the Executive Secretary to work with the members of the Council to develop a whole-of-government strategy on space traffic management to address the challenges of a congested space operating environment. Less than four months later, the third meeting of the National Space Council was held in the East

Room of the White House on June 18, 2018. At this meeting, the President signed [Space Policy Directive 3](#) (SPD-3), the Nation's first space traffic management policy, to ensure the protection of the national and economic security of the United States. The principles of SPD-3 endorse maintaining a safe, stable, and operationally sustainable space environment; sharing of timely and actionable space situational awareness (SSA) data; mitigating operational impacts of orbital debris; and preserving the space environment through a space traffic management (STM) framework.

To implement SPD-3, the Departments of Defense and Commerce are carrying out transition plans and cooperative agreements to move civil and commercial space traffic management from a military-centric process to a commercially focused interface. This

transition shifts responsibility for the provision and sharing of basic SSA information to the Department of Commerce while generating new opportunities for private companies to establish a commercial market for SSA data. Accordingly, the Department of Commerce is establishing a physical presence within the Combined Space Operations Center at Vandenberg Air Force Base in California and using the existing Unified Data Library to build an open-architecture data repository of orbital objects that will be the foundation of a future globally accessible space object catalog. To build international confidence and stimulate participation in this effort, the Department of State is increasing the timeliness and quality of registration of U.S. space objects, and NASA, on December 9, 2019, implemented an update to [U.S. Government Orbital Debris Mitigation Standard Practices](#), last published in 2001.

On June 26 and 27, 2019, the Departments of Commerce and State co-hosted the first-ever Space Enterprise Summit in Washington, D.C., to promote innovation and investment in the commercial space industry. Participants engaged with senior representatives from government, industry, and other space organizations to discuss the industry policy developments and emerging opportunities in space. On December 18, 2020, the Department of Commerce Bureau of Economic Analysis released a report with estimates of the U.S. space economy on a more rigorous basis utilizing international standards.

## **Stimulating Commercial Activity in Space**

Steady progress has been made on American space exploration and development goals with the help of commercial companies through the use of public-private partnerships, unique contracting methods, and considering commercial products and services as the default rather than an afterthought.

In May 2019, NASA announced a new paradigm for conducting science and technology demonstration projects on the Moon by awarding contracts to U.S. companies to deliver payloads to the lunar surface as a service through the Commercial Lunar Payload Services (CLPS). NASA has selected 14 companies through the CLPS program to bid on delivering science experiments and technology demonstrations to the lunar surface.

In March 2020, NASA selected SpaceX of Hawthorne, California, as the first U.S. commercial provider for logistics resupply to the Artemis Gateway. In April 2020, NASA awarded base-period contracts to three U.S. companies to design and develop the Human Landing Systems. Blue Origin (Kent, Washington), Dynetics (Huntsville, Alabama), and SpaceX are refining concepts for the lander system that will transport the next American astronauts to the lunar surface.

Under this Administration, the United States has restored domestic human launch capability through NASA's Commercial Crew Program. On May 30, 2020, for the first time in nearly ten years, American astronauts were launched from American soil on American rockets aboard NASA's SpaceX Demonstration Mission 2. Following this successful demonstration, NASA certified the SpaceX Crew Dragon for operational use as the first human-rated commercial space system.

On November 15, 2020, NASA's SpaceX Crew-1 mission transported a crew of four astronauts to the International Space Station, marking the first time the United States has had a fully operational crew transportation system since the end of the Shuttle program in 2011. This capability eliminates U.S. reliance on Russia to transport astronauts, resulting in more cost-effective alternatives to government-owned and operated vehicles.





*President Donald J. Trump, Vice President Mike Pence, Second Lady Karen Pence, and NASA Administrator Jim Bridenstine applaud SpaceX founder and CEO Elon Musk after the successful SpaceX Demonstration Mission 2 launch at NASA's Kennedy Space Center on Saturday, May 30, 2020. (Official White House Photo by Shealah Craighead.)*

In November 2020, NASA marked the twenty-year anniversary of continuous crewed operations on the International Space Station. Noting this remarkable achievement, prudent steps are being taken to prepare for the future of U.S. presence in low-Earth orbit once this national asset reaches its inevitable retirement. By harnessing American ingenuity and entrepreneurship, the United States is planning for a future that will involve multiple orbital platforms, at least some of which will be commercially operated. The United States foresees a future requirement for research, technology development, and crew training in low-Earth orbit, and is taking measures to increase commercial activity in this domain, which will allow the government to devote these resources to other critical exploration priorities.

On June 7, 2019, representatives from NASA visited NASDAQ in New York City to [announce](#) a plan to expand commercial activities on the International Space Station and to ring the opening bell. The plan includes methods to increase both supply and demand for space products and services, plans for new commercial platforms in Earth orbit, private tourism missions to the ISS, and identification and stimulation of long-term demand.

In the last several years, the United States has become a world leader in suborbital commercial platforms, including rocket-powered vehicles, high-altitude balloons, and parabolic aircraft. These vehicles, operated by American companies, have facilitated flights for hundreds of payloads for microgravity research and development by academia, private industry, and international partners. U.S. industry has created and shaped a market for

low-cost, iterative access to space for researchers, scientists, and students.

The use of radiofrequency spectrum is essential to the American way of life, including national economic and national security needs. Under this Administration, the United States has advocated for and protected the radiofrequency environment in which critical space systems operate. Both domestically and internationally, the viability of space systems has been a priority in discussions regarding spectrum, including space services as a component of the [Presidential Memorandum on Developing a Sustainable Spectrum Strategy for America's Future](#) issued by President Donald J. Trump on October 26, 2018.

As a result, the Office of Science and Technology Policy published two reports on U.S. leadership in radiofrequency-dependent fields: [Emerging Technologies and Their Expected Impact on Non-Federal Spectrum Demand](#) and [Research and Development Priorities for American Leadership in Wireless Communications](#). These reports, released in May 2019, reference the importance of space services, which play an integral role in the U.S. competitive strategy for 5G and enhance the position of the United States as a global leader in telecommunications. For example, on December 7, 2020, the Federal Communications Commission announced an \$886 million award through the Rural Digital Opportunity Fund to SpaceX to provide broadband internet access to rural areas nationwide.

Understanding the criticality of U.S. interests in space and need for sustained leadership, the National Space Council published [A New Era for Space Exploration and Development](#) on July 23, 2020, to articulate a vision for space exploration and development that calls for an

extension of U.S. presence from low-Earth orbit, a return to the Moon for a sustainable presence, and missions to Mars and beyond. The report lays out necessary steps to achieve a truly American future in space, recognizing that it is not merely American machines and astronauts that constitute U.S. space activities, but American values as well.



*A SpaceX Falcon 9 rocket is launched from Launch Complex 39A for NASA's SpaceX Demo-2 mission to the International Space Station with NASA astronauts Robert Behnken and Douglas Hurley aboard at NASA's Kennedy Space Center on Saturday, May 30, 2020. (NASA Photo by Joel Kowsky.)*





*President Donald J. Trump greets General John W. "Jay" Raymond after signing the 2020 National Defense Authorization Act establishing the United States Space Force at Hangar 6 at Joint Base Andrews on December 20, 2019. (Official White House Photo by Shealah Craighead.)*

## National Security Space Highlights: Maintaining the High Ground

The United States has significant national security and economic interests that are reliant upon space operations. Space assets are necessary to keep the country safe, protect U.S. citizens at home and abroad, and support the American way of life. There are now more international and commercial actors in space than ever before, and reliance on space has never been greater. At the same time, adversary counterspace threats pose increasing security challenges to the ability to operate freely in space. It is imperative to maintain a position of strength and further

develop advantages while U.S. interests in space are contested in this increasingly dynamic environment.



*Vice President Mike Pence swears in General John W. "Jay" Raymond as the first Chief of Space Operations for the U.S. Space Force in the Vice President's Ceremonial Office of the Eisenhower Executive Office Building at the White House on January 14, 2020. (Official White House Photo by D. Myles Cullen.)*



*The flag of United States Space Command is unfurled during a ceremony in the Rose Garden at the White House on August 29, 2019. (Official White House Photo by Tia Dufour.)*

The reestablishment of the United States Space Command as a Unified Combatant Command and the establishment of the United States Space Force as the sixth branch of the U.S. Armed Forces were significant efforts to effectively defend and protect American interests in all domains.

## **Reestablishing United States Space Command**

The President [directed the Department of Defense](#) to reestablish the United States Space Command (USSPACECOM) on December 18, 2018. On August 29, 2019, the President held a [Rose Garden ceremony](#) to formally establish USSPACECOM as a unified combatant command.

USSPACECOM has a central warfighting role in protecting and promoting the interests of the

United States and its allies, and deterring harmful acts by adversaries. Its role enables the joint force to integrate, synchronize, and employ space effects around the globe and is necessary to allow the Department of Defense to utilize every asset available across all branches of the Armed Forces.

Separate from the ‘organize, train, and equip function’ served by the United States Space Force, USSPACECOM conducts space operations to deter conflict and, if necessary, defeat aggression, as well as provide space support for the joint and combined force, and defend U.S. vital interests around the world. In doing so, it integrates warfighting space capabilities for other combatant commands and improves the resilience of U.S. space assets across the spectrum of conflict.





*U.S. Space Force Chief of Space Operations General John W. “Jay” Raymond and Senior Enlisted Advisor Chief Master Sergeant Roger Towberman present President Donald J. Trump with the United States Space Force Flag in the Oval Office on May 15, 2020. (Official White House Photo by Shealah Craighead.)*

## Establishing the United States Space Force

On June 18, 2018, in recognition that spacepower is a decisive component of overall military combat power, the [President directed the Department of Defense](#) to begin the process of creating the United States Space Force as the

sixth branch of the Armed Forces. On February 19, 2020, the President issued [Space Policy Directive 4](#) (SPD-4), formally directing the Secretary of Defense to develop a legislative proposal to create the United States Space Force.



*The official seal (L) and logo (R) of the United States Space Force.*





*Vice President Mike Pence addresses the U.S. Air Force Academy at its 2020 commencement ceremony, which included the first graduates to be commissioned into the U.S. Space Force at the U.S. Air Force Academy on April 18, 2020. (Official White House Photo by D. Myles Cullen.)*

On December 20, 2019, President Donald J. Trump signed the Fiscal Year 2020 National Defense Authorization Act, a historic piece of bipartisan legislation that formally created the United States Space Force to organize, train, and equip the Nation's space warfighters. The creation of the U.S. Space Force marks the first new military service since the establishment of the U.S. Air Force in 1947. The Administration continues to support the stand-up the U.S. Space Force, including advocating for space operations capabilities and sufficient appropriations, re-designating certain Air Force bases as Space Force bases, accessing and transferring personnel, and developing and implementing new cultural elements of the service.

On April 18, 2020, the Vice President delivered the commencement address at the graduation ceremony of the U.S. Air Force Academy Class of 2020. Eighty-six members of the class became the first company grade officers to be commissioned directly into the Space Force. Over 16,000 military and civilian personnel have been assigned to the Space Force since the first application window for volunteer transfers opened in May 2020. In addition, more than 8,500 active-duty Air Force members within 13 eligible officer and enlisted career fields have applied to transfer into the service. In September 2020, the Space Force began transferring an additional 2,410 space operators into the service, bringing the total number of transfers to nearly 11,000 as of December 2020.



*Vice President Mike Pence delivers remarks at a ceremony to re-designate existing U.S. Air Force installations as the first two installations of the United States Space Force at Cape Canaveral Space Force Station on December 9, 2020. (Official White House Photo by D. Myles Cullen.)*

In standing up the newest Armed Service, the U.S. Space Force has achieved a number of significant milestones at a rapid pace:

- On January 24, 2020, the Seal of the United States Space Force was publicly unveiled;
- On May 15, 2020, the flag of the United States Space Force was unfurled in an Oval Office ceremony;
- On July 22, 2020, the service unveiled its official logo and its motto, “Semper Supra,” meaning “always above”;
- On October 20, 2020, the first enlistees into the Space Force were sworn in and began Basic Military Training;
- On December 9, 2020, the Vice President announced the re-designation of Cape Canaveral Air Force Station as Cape Canaveral Space Force Station and Patrick Air Force Base and Patrick Space Force Base;
- On December 18, 2020, the Vice President announced, in his remarks at a celebration

for the first birthday of the Space Force, that its military personnel would be known as “Guardians.”

The United States Space Force has initially been established within the Department of the Air Force and will strengthen the ability of the United States to compete, deter, and win in an increasingly contested domain while minimizing bureaucracy. It is critical that the United States Space Force exists as a separate, distinct branch of the Armed Forces in order to efficiently and effectively respond to emerging challenges that threaten American interests in space. On August 10, 2020, the United States Space Force released its Capstone Publication, [Spacepower](#), to articulate the service’s foundational doctrine and shape the growth of its unique culture, values, and mission. The cultural identity the United States Space Force is being developed in a manner that promotes boldness, agility, and digital fluency.



*Vice President Mike Pence returns the salute of Senior Enlisted Advisor of the United States Space Force Chief Master Sergeant Roger Towberman during the celebration of the first birthday of the U.S. Space Force on Dec. 18, 2020, in Eisenhower Executive Office Building at the White House. (Official White House Photo by D. Myles Cullen.)*

## Protecting the Space and Cyber Domains

The United States and other nations of the world have become dependent on access to space for everything from entertainment and communication to navigation and financial transactions. While these tools provide efficient and unprecedented interconnectedness, they are also susceptible to threats such as hacking, and jamming.

Unlike military operations in other domains, space operations are inherently global and multi-domain, including cyberspace.

Amid growing concern for evolving cyber threats to U.S. space assets and supporting infrastructure, this Administration has

prioritized the protection of critical space systems for positioning, navigation, and timing; intelligence, surveillance, and reconnaissance; satellite communications; and weather monitoring.

In the interest of preventing and mitigating cyber threats harmful to U.S. interests in space and other domains around the globe, the President issued [Space Policy Directive 5](#) (SPD-5) on Cybersecurity for Space Systems on September 4, 2020. This Directive provides principles to protect space assets and their supporting infrastructure from cyber threats and ensure continuity of operations for space systems. These principles are derived from those for terrestrial systems and are directed at executive departments and agencies to foster practices within Government space operations and across the commercial space industry.





*A close up view of the uniform of U.S. Space Force Senior Enlisted Advisor CMSgt Roger Towberman in the Oval Office on May 15, 2020. (Official White House Photo by Shealah Craighead.)*

On February 12, 2020, the President issued an [Executive Order](#) on Strengthening National Resilience through Responsible Use of Positioning, Navigation, and Timing Services. This order seeks to protect the national and economic security of the United States and its partners by ensuring reliable and efficient function of the Global Positioning System (GPS) and related critical infrastructure. The United States continues to make GPS services available worldwide as a free service, which has offered immense global value for communications, security, commerce, agriculture, transportation, mobility, weather, and emergency response. However, dependence on this invisible utility and its widespread adoption require protection from disruption and manipulation to ensure national resilience.



*Chief of Space Operations Gen. John W. Raymond administers the oath of office to airmen transferring into the U.S. Space Force during a ceremony at the Pentagon on September 15, 2020. (U.S. Air Force Photo by Eric R. Dietrich.)*



*Vice President Mike Pence, Apollo 11 astronaut Buzz Aldrin, and Mark Armstrong commemorate the 50<sup>th</sup> anniversary of Apollo 11 at historic Launch Complex 39A at NASA's Kennedy Space Center on July 20, 2019. (Official White House Photo by Andrea Hanks.)*

## Conclusion: A Legacy of Unrivaled Leadership in Space

The Nation's space activity creates innumerable tangible and intangible benefits. Commercial and security aspects are easier to calculate and understand, but new knowledge and inspiration are equally critical. Beyond its symbolism, inspiration can be found in the impacts that space has in the daily lives of Americans in communities across the country. A presence in space contributes to the unique American identity and moves people of all ages to play a role in humanity's future.

From the re-establishment of the National Space Council in 2017 to the present, the Trump Administration's whole-of-government approach to leadership in space has prioritized the alignment of policy with the long-term interests of the United States in the rapidly

changing space domain. Leadership from the highest levels of the U.S. Government in the form of executive initiatives has provided a foundation that will allow the United States to continue to lead in a new era of increasing competition and increasingly routine commercial space activity.

The world's foremost spacefaring nation has not rested on its laurels but risen to the challenge to preserve and advance American security, prosperity, and values in space. As President Donald J. Trump said upon reestablishing the National Space Council, "after braving the vast unknown and discovering the new world, our forefathers did not only merely sail home — and, in some cases, never to return. They stayed, they explored, they built, they guided, and through that pioneering spirit, they imagined all of the possibilities that few dared to dream."

# Appendix I

## Chronology of Trump Administration Space Policy Activities

April 24, 2017	President Donald J. Trump, from the Oval Office, speaks with NASA astronauts Peggy Whitson and Jack Fischer aboard the International Space Station to congratulate Commander Whitson for breaking the record for most time spent in space by any American astronaut.
May 16, 2017	Representatives of the Governments of the United States and Japan hold the <a href="#">Fourth Meeting of the U.S.-Japan Comprehensive Dialogue on Space</a> in Washington, D.C.
June 7, 2017	Vice President Mike Pence delivers <a href="#">remarks</a> at the Class of 2017 Astronaut Announcement at NASA's Johnson Space Center in Houston, Texas.
June 17, 2017	<a href="#">Executive Order</a> on Reviving the National Space Council issued by President Donald J. Trump, designating Vice President Mike Pence as Chairman.
June 23, 2017	Vice President Mike Pence delivers <a href="#">remarks</a> at Air Force Space Command at Schriever Air Force Base in Colorado Springs, Colorado.
July 7, 2017	Vice President Mike Pence delivers <a href="#">remarks</a> at NASA's Kennedy Space Center in Florida.
September 25, 2017	Vice President Mike Pence speaks with NASA astronauts Randy Bresnik, Mark Vande Hei, and Joe Acaba aboard the International Space Station and tours NASA's Marshall Space Flight Center in Huntsville, Alabama.
September 26, 2017	Vice President Mike Pence <a href="#">announces</a> the First Meeting of the National Space Council.
October 5, 2017	Vice President Mike Pence delivers <a href="#">remarks</a> and chairs the First Meeting of the National Space Council at the Smithsonian National Air and Space Museum's Steven F. Udvar-Hazy Center in Chantilly, Virginia.



October 10, 2017	Vice President Mike Pence visits the Mojave Spaceport in Mojave, California.
October 26, 2017	Vice President Mike Pence visits the Lockheed Martin Space Systems facility in Littleton, Colorado.
December 11, 2017	<a href="#">Space Policy Directive 1</a> , Reinvigorating America’s Human Space Exploration Program, issued by President Donald J. Trump.
February 21, 2018	Vice President Mike Pence delivers <a href="#">remarks</a> and chairs the Second Meeting of the National Space Council at NASA’s Kennedy Space Center in Florida.
March 21, 2018	The Office of Science and Technology Policy releases report on <a href="#">Protecting and Preserving Apollo Program Lunar Landing Sites and Artifacts</a> .
March 23, 2018	<a href="#">National Space Strategy</a> unveiled by President Donald J. Trump.
April 26, 2018	Vice President Mike Pence delivers <a href="#">remarks</a> at the 34 <sup>th</sup> Space Symposium in Colorado Springs, Colorado.
May 24, 2018	<a href="#">Space Policy Directive 2</a> , Streamlining Regulations on Commercial Use of Space, issued by President Donald J. Trump.
June 18, 2018	Vice President Mike Pence delivers <a href="#">remarks</a> and chairs the Third Meeting of the National Space Council in the East Room of the White House.  <a href="#">Space Policy Directive 3</a> , National Space Traffic Management Policy, issued by President Donald J. Trump.
June 20, 2018	<a href="#">National Near-Earth Object Preparedness Strategy and Action Plan</a> released by the National Science and Technology Council.
July 20, 2018	<a href="#">Presidential Message on Space Exploration Day</a> issued by President Donald J. Trump.  Representatives of the Governments of the United States and Japan hold the <a href="#">Fifth Meeting of the Japan-U.S. Comprehensive Dialogue on Space</a> in Tokyo, Japan.

July 31, 2018 The Office of Management and Budget and Office of Science and Technology Policy list “American Space Exploration and Commercialization” among the [Fiscal Year 2020 Research and Development Budget Priorities](#).

August 9, 2018 Vice President Mike Pence delivers [remarks](#) on the future of the U.S. military in space at the Pentagon.

August 23, 2018 Vice President Mike Pence visits and delivers [remarks](#) at NASA’s Johnson Space Center in Houston, Texas.

October 23, 2018 Vice President Mike Pence delivers [remarks](#) and chairs the Fourth Meeting of the National Space Council at the National Defense University at Fort McNair in Washington, D.C.

October 26, 2018 [Presidential Memorandum on Developing a Sustainable Spectrum Strategy for America’s Future](#) issued by President Donald J. Trump.

December 12, 2018 Vice President Mike Pence visits and delivers remarks to employees at NASA Headquarters in Washington, D.C.

December 18, 2018 Vice President Mike Pence delivers [remarks](#) and tours NASA’s Kennedy Space Center in Florida.

February 7, 2019 Vice President Mike Pence attends the NASA Day of Remembrance at Arlington National Cemetery in Arlington, Virginia.

February 19, 2019 [Space Policy Directive 4](#), Establishment of the United States Space Force, issued by President Donald J. Trump.

March 1, 2019 The Department of Defense sends a [legislative proposal](#) to Congress to create the U.S. Space Force as the sixth branch of the U.S. Armed Forces.

March 6, 2019 Vice President Mike Pence speaks with NASA astronaut Anne McClain and Canadian astronaut David Saint-Jacques aboard the International Space Station from NASA Headquarters in Washington, D.C.

March 26, 2019 Vice President Mike Pence delivers [remarks](#) and chairs the Fifth Meeting of the National Space Council at the U.S. Space and Rocket Center in Huntsville, Alabama.

[National Space Weather Strategy and Action Plan](#) released by the National Science and Technology Council.

May 6, 2019 Vice President Mike Pence delivers [remarks](#) at the SATELLITE 2019 Conference at the Walter E. Washington Convention Center in Washington, D.C.

May 27, 2019 President Donald J. Trump and Japanese Prime Minister Shinzo Abe [confirm](#) intent to increase bilateral cooperation in human space exploration at U.S.-Japan Summit in Tokyo, Japan.

June 21, 2019 The United Nations Committee on Peaceful Uses of Outer Space [adopts](#) U.S. guidelines for the long-term sustainability of outer space activities.

July 11, 2019 Vice President Mike Pence delivers [remarks](#) to personnel and tours Vandenberg Air Force Base, California.

July 16, 2019 Vice President Mike delivers [remarks](#) and unveils Neil Armstrong's newly restored Apollo 11 spacesuit at the Smithsonian National Air and Space Museum in Washington, D.C.

July 19, 2019 President Donald J. Trump hosts Apollo 11 astronauts and their families at the White House to [commemorate the 50th Anniversary of the Apollo 11 Moon landing](#).

July 20, 2019 Vice President Mike Pence delivers [remarks](#) to celebrate the 50<sup>th</sup> anniversary of the Apollo 11 Moon landing at NASA's Kennedy Space Center in Florida.

[Presidential Message on Space Exploration Day](#) issued by President Donald J. Trump.

July 24, 2019 Representatives of the Governments of the United States and Japan hold the [Sixth Meeting of the U.S.-Japan Comprehensive Dialogue on Space](#) in Washington, D.C.

August 20, 2019 [National Security Presidential Memorandum](#) on Launch of Spacecraft Containing Space Nuclear Systems issued by President Donald J. Trump.



August 20, 2019 Vice President Mike Pence delivers [remarks](#) and chairs the Sixth Meeting of the National Space Council at the Smithsonian National Air and Space Museum’s Steven F. Udvar-Hazy Center in Chantilly, Virginia.

August 29, 2019 President Donald J. Trump delivers [remarks](#) at the ceremony reestablishing the [United States Space Command](#) in the White House Rose Garden.

August 30, 2019 The Office of Management and Budget and Office of Science and Technology Policy list “American Space Exploration and Commercialization” among the [Fiscal Year 2021 Research and Development Budget Priorities](#).

October 18, 2019 President Donald J. Trump and Vice President Mike Pence, from the Roosevelt Room of the White House, speak with NASA astronauts Christina Koch and Jessica Meir as they conduct the first all-woman spacewalk at the International Space Station.

October 21, 2019 Vice President Mike Pence delivers [remarks](#) at the 2019 International Astronautical Congress opening ceremony at the Walter E. Washington Convention Center in Washington, D.C.

November 8, 2019 Vice President Mike Pence hosts a ceremony to plant a Moon Tree at the Vice President’s Residence in Washington, D.C.

November 14, 2019 Vice President Mike Pence delivers [remarks](#) and tours NASA’s Ames Research Center in Moffett Field, California.

December 9, 2019 The National Space Council announces an update to the [Orbital Debris Mitigation Standard Practices](#).

December 20, 2019 President Donald J. Trump delivers [remarks](#) at Joint Base Andrews and signs S.1790, National Defense Authorization Act for Fiscal Year 2020 into law, establishing the United States Space Force as the sixth branch of the U.S. Armed Forces.

January 14, 2020 Vice President Mike Pence swears in General John W. “Jay” Raymond as the first Chief of Space Operations of the U.S. Space Force at the Eisenhower Executive Office Building in Washington, D.C.

February 10, 2020 President Donald J. Trump [releases](#) record \$25 billion NASA budget request for Fiscal Year 2021.

February 12, 2020 [Executive Order](#) on Strengthening National Resilience through Responsible Use of Positioning, Navigation, and Timing Services issued by President Donald J. Trump.

February 13, 2020 [Executive Order](#) Amending Executive Order 13803 on Reviving the National Space Council issued by President Donald J. Trump.

February 19, 2020 Vice President Mike Pence delivers [remarks](#) and tours NASA Langley Research Center in Hampton, Virginia.

April 6, 2020 [Executive Order](#) on Encouraging International Support for the Recovery and Use of Space Resources issued by President Donald J. Trump.

April 18, 2020 Vice President Mike Pence delivers the [commencement address](#) at the U.S. Air Force Academy in Colorado Springs, Colorado.

May 15, 2020 President Donald J. Trump [unveils](#) the U.S. Space Force service flag in the Oval Office.

May 19, 2020 Vice President Mike Pence delivers [remarks](#) and chairs the Seventh Meeting on the National Space Council at NASA's Headquarters in Washington, D.C.

May 20, 2020 The Department of Commerce publishes modernized and streamlined [Licensing of Private Remote Sensing Space Systems](#).

May 30, 2020 [President Donald J. Trump](#) and [Vice President Mike Pence](#) deliver remarks upon the successful launch of NASA's SpaceX Demonstration Mission 2 at NASA's Kennedy Space Center in Florida.

June 17, 2020 Vice President Mike Pence speaks with NASA astronauts Chris Cassidy, Bob Behken and Doug Hurley aboard the International Space Station from the White House Situation Room, to congratulate astronauts Behken and Hurley on the successful launch of NASA's SpaceX Demonstration Mission 2.

July 20, 2020 [Presidential Message on Space Exploration Day](#) issued by President Donald J. Trump.

July 23, 2020 [A New Era for Space Exploration and Development](#) published by the National Space Council.

July 28, 2020	Representatives of the Governments of the United States and Russia hold a <a href="#">Space Security Exchange</a> , the first since 2013, in Vienna, Austria.
August 14, 2020	The Office of Management and Budget and Office of Science and Technology Policy list “American Space Leadership” among the <a href="#">Fiscal Year 2022 Research and Development Budget Priorities</a> .
August 26, 2020	Representatives of the Governments of the United States and Japan hold the <a href="#">Seventh Meeting of the Japan-U.S. Comprehensive Dialogue on Space</a> in Tokyo, Japan.
September 4, 2020	<a href="#">Space Policy Directive 5</a> , Cybersecurity for Space Systems, issued by President Donald J. Trump.
October 13, 2020	The United States and seven partner spacefaring nations become the first signatories of the <a href="#">Artemis Accords</a> .
October 15, 2020	The Federal Aviation Administration fulfills direction from SPD-3 by publishing <a href="#">Streamlined Launch and Reentry Licensing Requirements</a> .
October 27, 2020	NASA and the European Space Agency <a href="#">sign</a> a memorandum of understanding formalizing their partnership on the Artemis Gateway.
November 15, 2020	Vice President Mike Pence attends NASA’s SpaceX Crew-1 launch at NASA’s Kennedy Space Center in Florida.
December 9, 2020	Vice President Mike Pence delivers <a href="#">remarks</a> to members of the 45th Space Wing and announces the first re-designation of two United States Air Force installations as Space Force installations – Cape Canaveral Space Force Base and Patrick Space Force Station at Cape Canaveral Space Force Base, Florida.  Vice President Mike Pence delivers <a href="#">remarks</a> , chairs the Eighth Meeting of the National Space Council, and announces the first cadre of astronauts for the Artemis Program at NASA’s Kennedy Space Center in Florida.  <a href="#">National Space Policy</a> issued by President Donald J. Trump.
December 16, 2020	<a href="#">Space Policy Directive 6</a> , National Strategy for Space Nuclear Power and Propulsion, issued by President Donald J. Trump.



- December 18, 2020 Vice President Mike Pence delivers [remarks](#) at a ceremony celebrating the first birthday of the United States Space Force and announces that military personnel will be known as “Guardians.”
- December 30, 2020 [National Strategy for Planetary Protection](#) published by the National Space Council.
- January 12, 2021 [Executive Order](#) on Promoting Small Modular Reactors for National Defense and Space Exploration issued by President Donald J. Trump.

# Appendix II

## Presidential Executive Order on Reviving the National Space Council

Executive Order 13803  
June 30, 2017

### Reviving the National Space Council

By the authority vested in me as President by the Constitution and the laws of the United States of America, and in order to provide a coordinated process for developing and monitoring the implementation of national space policy and strategy, it is hereby ordered as follows:

#### Section 1. Purpose

The National Space Council (Council) was established by Title V of Public Law 100-685 and Executive Order 12675 of April 20, 1989 (Establishing the National Space Council). The Council was tasked with advising and assisting the President regarding national space policy and strategy. The Council was never formally disestablished, but it effectively ceased operation in 1993. This order revives the Council and provides additional details regarding its duties and responsibilities.

#### Sec. 2. Revival and Composition of the National Space Council

- (a) The Council is hereby revived and shall resume operations.
- (b) The Council shall be composed of the following members:
  - (i) The Vice President, who shall be Chair of the Council;
  - (ii) The Secretary of State;
  - (iii) The Secretary of Defense;
  - (iv) The Secretary of Commerce;
  - (v) The Secretary of Transportation;
  - (vi) The Secretary of Homeland Security;
  - (vii) The Director of National Intelligence;
  - (viii) The Director of the Office of Management and Budget;

- (ix) The Assistant to the President for National Security Affairs;
- (x) The Administrator of the National Aeronautics and Space Administration;
- (xi) The Director of the Office of Science and Technology Policy;
- (xii) The Assistant to the President for Homeland Security and Counterterrorism;
- (xiii) The Chairman of the Joint Chiefs of Staff; and
- (xiv) The heads of other executive departments and agencies (agencies) and other senior officials within the Executive Office of the President, as determined by the Chair.

### Sec. 3. Functions of the Council

(a) The Council shall advise and assist the President regarding national space policy and strategy, and perform such other duties as the President may, from time to time, prescribe.

(b) In particular, the Council is directed to:

- (i) review United States Government space policy, including long-range goals, and develop a strategy for national space activities;
- (ii) develop recommendations for the President on space policy and space-related issues;
- (iii) monitor and coordinate implementation of the objectives of the President's national space policy and strategy;
- (iv) foster close coordination, cooperation, and technology and information exchange among the civil, national security, and commercial space sectors;
- (v) advise on participation in international space activities conducted by the United States Government; and
- (vi) facilitate the resolution of differences concerning major space and space-related policy matters.

(c) The Council shall meet at least annually.

(d) The revival and operation of the Council shall not interfere with the existing lines of authority in or responsibilities of any agencies.

(e) The Council shall have a staff, headed by a civilian Executive Secretary appointed by the President.



#### Sec. 4. Responsibilities of the Chair

(a) The Chair shall serve as the President's principal advisor on national space policy and strategy.

(b) The Chair shall, in consultation with the members of the Council, establish procedures for the Council and establish the agenda for Council activities.

(c) The Chair shall report to the President quarterly on the Council's activities and recommendations. The Chair shall advise the Council, as appropriate, regarding the President's directions with respect to the Council's activities and national space policy and strategy.

(d) The Chair may recommend to the President candidates for the position of Executive Secretary.

(e) The Chair, or upon the Chair's direction, the Executive Secretary, may invite the heads of other agencies, other senior officials in the Executive Office of the President, or other Federal employees to participate in Council meetings.

(f) The Chair shall authorize the establishment of committees of the Council, including an executive committee, and of working groups, composed of senior designees of the Council members and of other Federal officials invited to participate in Council meetings, as he deems necessary or appropriate for the efficient conduct of Council functions.

#### Sec. 5. National Space Policy and Strategy Planning Process

(a) Each agency represented on the Council shall provide such information to the Chair regarding its current and planned space activities as the Chair shall request.

(b) The head of each agency that conducts space related activities shall, to the extent permitted by law, conform such activities to the President's national space policy and strategy.

(c) On space policy and strategy matters relating primarily to national security, the Council shall coordinate with the National Security Council (NSC) to create policies and procedures for the Council that respect the responsibilities and authorities of the NSC under existing law.

#### Sec. 6. Users' Advisory Group

(a) The Council shall convene a Users' Advisory Group (Group) pursuant to Public Law 101-611, section 121, composed of non-Federal representatives of industries and other persons involved in aeronautical and space activities.

(b) Members of the Group shall serve without any compensation for their work for the

Group. Members of the Group, while engaged in the work of the Group, may be allowed travel expenses, including per diem in lieu of subsistence, to the extent permitted by law for persons serving intermittently in Government service (5 U.S.C. 5701-5707), consistent with the availability of funds.

(c) The Group shall report directly to the Council and shall provide advice or work product solely to the Council.

#### Sec. 7. Administrative Provisions

(a) To aid in the performance of the functions of the Council:

- (i) The Office of Administration in the Executive Office of the President shall provide the Council with administrative support on a reimbursable basis; and
- (ii) Legal advice to the Council itself with respect to its work and functions shall be provided exclusively by the Office of the Counsel to the President.

(b) To the extent practicable and permitted by law, including the Economy Act, and within existing appropriations, agencies serving on the Council and interagency councils and committees that affect space policy or strategy shall make resources, including, but not limited to, personnel, office support, and printing, available to the Council as reasonably requested by the Chair or, upon the Chair's direction, the Executive Secretary.

(c) Agencies shall cooperate with the Council and provide such information and advice to the Council as it may reasonably request, to the extent permitted by law.

Sec. 8. Report. Within 1 year of the date of this order, and annually thereafter, the Council shall submit a report to the President setting forth its assessment of, and recommendations for, the space policy and strategy of the United States Government.

#### Sec. 9. General Provisions

(a) This order supersedes Executive Order 12675 of April 20, 1989 (Establishing the National Space Council). To the extent this order is inconsistent with any provision of any earlier Executive Order or Presidential Memorandum, this order shall control.

(b) If any provision of this order or the application of such provision is held to be invalid, the remainder of this order and other dissimilar applications of such provision shall not be affected.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(d) Nothing in this order shall be construed to impair or otherwise affect:

- (i) the authority granted by law to an executive department or agency, or the head thereof;  
or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(e) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.



**Executive Order Amending Executive Order 13803**  
**February 13, 2020**

**Reviving the National Space Council**

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Membership of the Council

Section 2(b) of Executive Order 13803 of June 30, 2017 (Reviving the National Space Council) is hereby amended to read as follows:

“(b) The Council shall be composed of the following members:

- (i) The Vice President, who shall be Chair of the Council;
- (ii) The Secretary of State;
- (iii) The Secretary of Defense;
- (iv) The Secretary of Commerce;
- (iii) The Secretary of Transportation;
- (iv) The Secretary of Energy;
- (v) The Secretary of Homeland Security;
- (vi) The Director of National Intelligence;
- (v) The Director of the Office of Management and Budget;
- (vi) The Assistant to the President for National Security Affairs;
- (vii) The Assistant to the President for Economic Policy;
- (viii) The Assistant to the President for Domestic Policy;
- (vii) The Administrator of the National Aeronautics and Space Administration;
- (viii) The Director of the Office of Science and Technology Policy;
- (ix) The Chairman of the Joint Chiefs of Staff; and

(x) The heads of other executive departments and agencies (agencies) and other senior officials within the Executive Office of the President, as determined by the Chair.”

Sec. 2. Revocation of Quarterly Reporting Requirement.

The first sentence of section 4(c) of Executive Order 13803 is hereby revoked.

Sec. 3. General Provisions.

(a) Nothing in this order shall be construed to impair or otherwise affect:

- (i) the authority granted by law to an executive department or agency, or head thereof; or
- (ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.