Policy Recommendations

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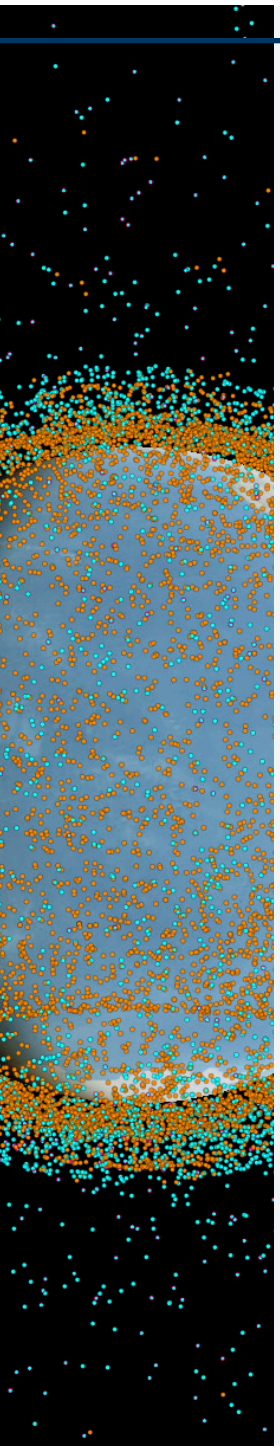
Policy Recommendations



Taking Action on Orbital Debris

Harmonize orbital debris mitigation requirements across licensing authorities under one regulatory agency.

Currently, orbital debris mitigation requirements are part of licenses issued by three different U.S. federal agencies: the Federal Aviation Administration, the National Oceanic and Atmospheric Administration, and the Federal Communications Commission. While consolidation of licensing into a single entity is not achievable, the National Space Council or its equivalent should coordinate interagency processes to ensure space debris mitigation requirements are consistent across licensing agencies in order to support efficiency in licensing processes and certainty for operators applying for licensing.

Initiate a national active debris removal mission to leverage commercial capabilities.

The United States government—through NASA—should establish a program to fund and conduct the removal of a U.S.-government-owned legacy space debris object, preferably a large rocket body. This mission should be conducted as a public-private partnership through NASA and would leverage existing NASA technical capability and investment related to in-space servicing, assembly, and manufacturing (ISAM) as well as emerging industry capabilities related to satellite servicing and in-space logistics. It is important that a national orbital debris removal mission be conducted by a civil government agency (rather than the Department of Defense and/or Space Force) in order to ensure that active debris removal (ADR) action is not seen as a threatening or adversarial capability. Such a mission would help to establish U.S. leadership in orbital debris remediation and set an example to both adversary nations and allies of the importance of taking responsible action to remediate national legacy debris objects.

Continue to support the development of commercial in-space servicing, assembly, and manufacturing (ISAM) capabilities.

Government support for commercial ISAM capabilities—in terms of both contracting and R&D funding—provides important adjacent and complementary technology and services useful to advance debris remediation capabilities. The U.S. government should continue to support this emerging growth area in the space economy, including purchasing commercial services and not developing government capabilities that compete with industry offerings. For both efficiency and economic development purposes, it is also important to leverage and use industry and/or voluntary consensus standards in areas like refueling, docking, and interfaces instead of developing bespoke requirements in government procurements.

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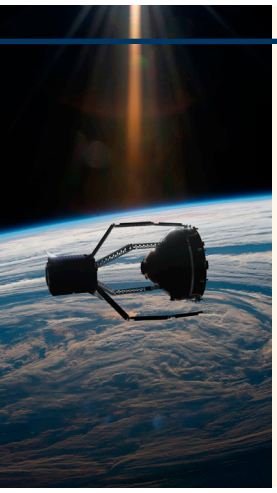

Focus Issue: Conducting a National Active Debris Removal Mission

The U.S. government—through NASA—should establish a program to fund and conduct the removal of a U.S.-government-owned space debris object, preferably a large rocket body.

This mission should be conducted as a public-private partnership through NASA and would leverage existing NASA technical capability and investment related to in-space servicing, assembly, and manufacturing (ISAM), as well as emerging industry capabilities related to satellite servicing and in-space logistics. Such a mission would help to establish U.S. leadership in orbital debris remediation and set an example of responsibility in the importance of taking responsible action in support of the space economy. It would also deepen U.S. industry capabilities related to commercial markets in ISAM. **VIEW MORE ➔**

Image credit: ESA.

Strengthening Space and National Security

Refer to space as an "operational" domain rather than a "warfighting" domain.

By referring to space as a "warfighting" domain, the United States has handed its adversaries an easy diplomatic win by allowing them to use that phrasing as evidence that the United States is the one increasing tensions and weaponizing space. Referring to space as an operational domain would be an acknowledgment of how the military needs to continue to operate in and through space, would be in line with how others refer to it (including NATO), but would not hamper U.S. diplomatic efforts required to meet national security space concerns and goals.

Discourage the deliberate creation of debris.

The United States should maintain its current policy of committing not to conduct destructive direct-ascent anti-satellite (DA-ASAT) missile tests, as well as continuing to promote this during multilateral discussions in order to stigmatize this sort of testing and also encourage others to commit to this as an emerging international norm of responsible behavior in space.

Establish international norms of behavior for military space activities.

The United States should work with other countries to establish common understandings for what is considered responsible behavior in space, particularly for military activities that could cause misperceptions or increase tensions, such as rendezvous and proximity operations in orbit. The United States should use space situational awareness in order to help verify such actions.

Redouble efforts to improve resilience.

The United States needs to continue working to ensure the resiliency of its space assets via more responsive space launch, proliferated satellite architectures across multiple orbits and payloads, and more use of U.S. commercial capabilities, as well as the capabilities of U.S. allies.

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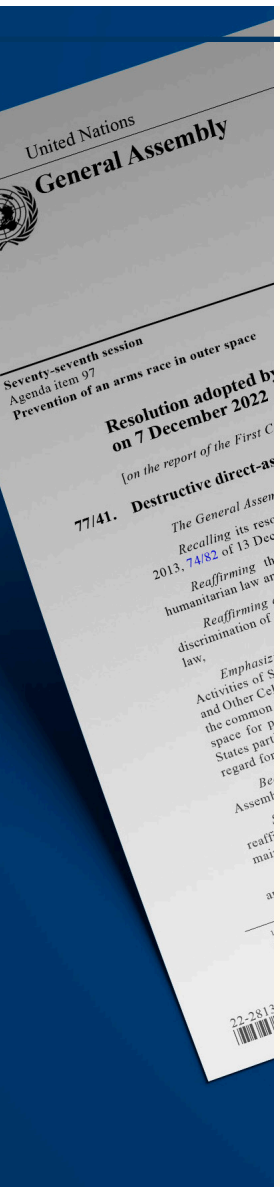

Focus Issue: Continuing the Destructive DA-ASAT Missile Test Moratorium

Continue to support the destructive direct-ascent anti-satellite (DA-ASAT) missile test moratorium as a matter of U.S. policy.

The United States should continue to demonstrate leadership in norm-building by continuing to support the commitment not to conduct destructive DA-ASAT missile tests, both in terms of a policy that the United States will hold itself to and to promote more countries making this commitment themselves. The United States benefits from the stable, predictable space environment resulting from this moratorium.

Maintain a policy of not deliberately creating debris during military space activities and missions.

Deliberately creating debris on orbit will hamper the United States' ability to use and operate through space, ultimately harming U.S. national security. If the United States sets the precedent that this sort of action is acceptable, rival countries will follow, and ultimately the United States will comparatively suffer the most and thus be worse off than its adversaries.

Provide leadership in multilateral space security fora to shape norms of responsible behavior in space.

In April 2025, the United Nations is starting a four-year process of discussing issues related to space security called an "Open-ended working group on the prevention of an arms race in outer space in all its aspects." This is an excellent opportunity to generate momentum for international support of the idea that responsible space actors do not deliberately create debris on orbit through destructive DA-ASAT missile tests. Active participation in this forum would send a strong signal to the international community that the United States will continue to show leadership in being committed to the safety, security, stability, and long-term sustainability of space activities. Furthermore, it will provide a way to counter the influence of adversary nations in this forum; otherwise, in the absence of United States engagement and leadership, the discussions and outcome will be shaped to its adversaries' advantage.

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Fostering Commercial Space With Efficient Policy and Oversight Tools

The Office of Space Commerce (OSC) within the Department of Commerce should act as the lead agency for the authorization and supervision of private sector space activities.

A clear and certain oversight process should be implemented with one agency designated as a lead to close the gap in licensing of commercial space operations and ensure consistency across the U.S. government. This agency should be the Office of Space Commerce (OSC) within the Department of Commerce and should be elevated out of the National Oceanic and Atmospheric Administration (NOAA) to an office within the Office of the Secretary of Commerce. Making OSC the lead agency will complement its developing role of providing civil space situational awareness data and services to support spaceflight safety as it works towards developing a future space traffic coordination system.

Implement mission authorization through an interagency process, with OSC as the lead.

Acting as the lead agency for the authorization and supervision of private sector space activities, OSC should serve as a clearinghouse or tracking point for private sector space activities seeking government approval. This will provide more clarity for commercial companies who may not otherwise know who to go to in the U.S. government for a license and also help OSC better understand the breadth and scope of private sector space activities to inform its mission to promote such activities. For further discussion of mission authorization, please refer to the focus section.

Ensure licensing authorities are resourced at levels to ensure responsiveness.

Efforts to reform regulatory provisions to enhance the competitiveness of the U.S. space industry must be complemented by ensuring that licensing authorities have the appropriate amount of budgetary and staffing resources to respond to applications and issue licenses in an efficient manner. This should include retaining the Space Bureau at the Federal Communications Commission (FCC), which has made progress in enhancing the responsiveness of that agency to satellite industry activities.

Establish an international dialogue on oversight of commercial space.

In order to improve the linkages between commercial space and foreign and trade policy, the U.S. government should pursue an active strategy of diplomatic and civil society dialogue on international approaches to commercial space sector policy, including with competitor nations. Such an approach will help to identify and share regulatory best practices, reduce the risk of regulatory fragmentation and forum shopping, and potentially help to identify trade opportunities for U.S. companies. It will help to ensure that the United States is at the forefront of establishing the values that define economic competition in the space market.

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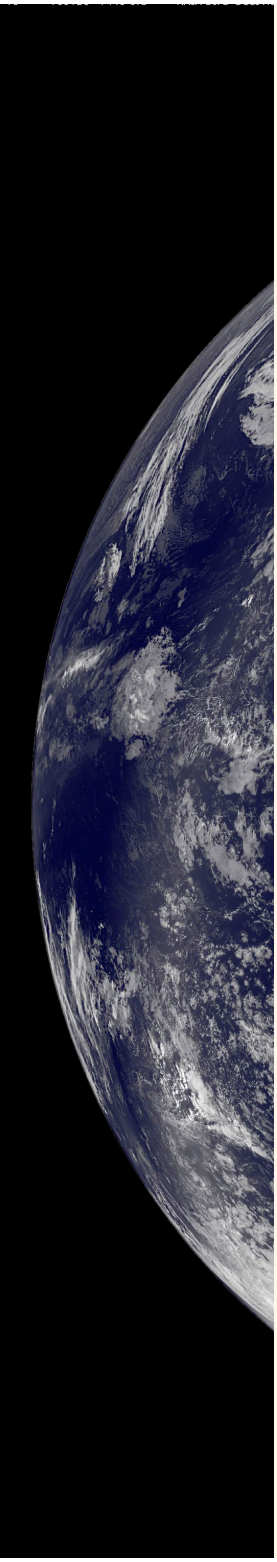

Ensuring Operational Continuity and Safety through Space Situational Awareness and Space Traffic Coordination

Maintain efforts to implement Space Policy Directive (SPD)-3 and the Traffic Coordination System for Space (TraCSS).

Since the finalization and publication of SPD-3, the Office of Space Commerce (OSC) has made steady progress on implementing a civil space traffic coordination system. As TraCSS continues to transition from initial operations to its planned full-scale service, it is of great importance to ensure continuity in this program and work across the administration and Congress to provide full funding for the Office of Space Commerce to implement TraCSS. A civil space traffic coordination (STC) system is a key enabler of maintaining the United States' leadership in growing the space economy, supporting continuity and safety of operations by commercial space actors (as well as other users of the space environment). Transitioning this function from the Department of Defense to the Office of Space Commerce also promotes efficiency by enabling DoD to focus its space situational awareness (SSA) efforts on fulfilling its national security missions.

Lead International Efforts Towards Space Traffic Coordination.

As large satellite constellations are deployed, led in large part by U.S. operators, the need to have processes, practices, and methods in place to share basic space safety information, in order to protect operational continuity and maintain stability in the operating environment, increases. U.S. operators will need to ensure that space safety information can be exchanged with operators from other jurisdictions. With the existing operational expertise of its operators, its existing base of SSA sensors and data, and the deployment of the TraCSS system, the United States is positioned to lead international efforts to establish these basic coordination practices. The United States should proactively engage in international conversations to develop STC mechanisms, which might be voluntary in nature, including working closely with allied efforts, such as the EU Space Surveillance and Tracking (EU SST) program, to ensure an efficient and effective coordination network emerges that supports U.S. interests and a stable environment conducive to the long-term growth of space activities.

Leverage commercial capabilities to the maximum extent while also supporting SSA as a public good.

Both the DoD and OSC TraCSS should purchase commercial SSA data and services and pursue international data-sharing agreements in lieu of building new government capabilities. This will promote efficiency, support industry development, and allow the DoD to prioritize existing national sensor networks to support national security needs. The United States should also make basic space safety information services as publicly and freely available as possible. The private sector should be incentivized to develop innovative analytical tools and advanced services based both on public services as well as the data collected by commercial firms.

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Focus Issue: Implementing Mission Authorization

Implement mission authorization through an interagency process, with the Office of Space Commerce (OSC) as the lead.

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The OSC should act as the lead agency for the authorization and supervision of private sector space activities.

A clear and certain oversight process should be implemented with one agency designated as a lead to close the gap in licensing of commercial space operations and ensure consistency across the U.S. government. This agency should be the OSC within the Department of Commerce and should be elevated out of the National Oceanic and Atmospheric Administration (NOAA) to an office within the Office of the Secretary of Commerce. To make this process as effective as possible, the following elements should be included:

- For all activities not covered under existing authorities at the Federal Communications Commission (FCC), Federal Aviation Administration (FAA), and NOAA, OSC should serve as the interface point for licensee applicants for tracking applications and processing times. A clear timeline should be established for licensing processes, and the OSC should be the point of contact for applicants seeking updates on the expected processing timelines for their applications. Where interagency coordination is required in the licensing process, this clearinghouse function would provide administrative support for that coordination and serve as a single point of information for applicants. Establishing OSC as such a clearinghouse would improve the competitiveness of the U.S. space industry by reducing the challenges companies face in identifying and interfacing with the appropriate licensing authorities.
- Mission authorization should apply to the mission conducted by a spacecraft over its lifetime as a whole (as opposed to requiring separate approvals or processes for each individual part of a mission). It would effectively serve as a "license to operate" within certain pre-approved parameters, that are defined in the initial license.
- In the interests of promoting a safe operating environment for all commercial space businesses, licensing conditions should ensure that basic space safety requirements are met (including registration with SSA service providers and compliance with space debris mitigation guidelines) and should seek to ensure uniformity in application of these requirements to all operators of the same type of mission. Such uniformity is essential to ensure individual operators are not unfairly advantaged or disadvantaged by the authorization process. Licenses should be based on a presumption of approval, with the burden on the government to describe rationale for denial, in such cases. Attention should be given to long-term externalities of the licensing decisions.

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Leveraging a Whole-of-Government Approach to Drive Space Policy Leadership

Keep an executive branch coordination mechanism for space policy, such as the National Space Council.

Given the increasing strategic and economic importance of the space sector, it is important to ensure there is a high-level coordination of federal policy for this domain. The National Space Council (NSpC), or another similar coordinating mechanism, should be implemented as the main body for developing national space policy and should be staffed with experts from inside and outside the U.S. government, specifically those who understand the interagency process and the importance of space. It would also be beneficial to consider ways to include the Federal Communications Commission in NSpC discussions, when relevant, to enhance the coordination of policy.

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Supporting Multilateral Space Diplomacy

Work with and through multilateral fora to help shape international consensus on norms of behavior, standards, and practices to enhance the safety and sustainability of space activities.

As noted previously, the rapid increase in the number of spacefaring countries, the rise of commercial actors, and the proliferation of counterspace capabilities globally are transforming the outer space environment and posing numerous challenges for all space actors. The United States cannot address these developments on its own, as it requires international cooperation both to promulgate the behaviors and best practices to ensure long-term sustainability and security, but also just due to sheer physics, the activities of a single actor have the potential to affect everyone's ability to continue to utilize space. Therefore, the United States should continue to actively pursue the development of norms of responsible behavior and provide leadership in the development of international consensus standards and best practices to enhance the security, safety, and sustainability of space activities through engagement with the appropriate international and multilateral fora. One of the norms the United States should continue to promote is the decision not to conduct destructive direct-ascent anti-satellite (DA-ASAT) missile tests.

Continued on page 08 ➔

Supporting Multilateral Space Diplomacy *(continued)*

Harness its leadership in space exploration to preserve the stability, safety, and security of the space environment and to support multilateral efforts to improve cooperative space governance.

Given the increasing number and diversity of spacefaring nations, international cooperation is becoming ever more important to preserve the stability, safety, and security of the space environment. The Artemis Accords provide a valuable opportunity to use space exploration as a tool of diplomacy in support of the United States' objectives to promote the rule of law in space to ensure the safety, stability, and security of space activities. It also provides an opportunity to engage new, nontraditional partners in emerging space countries. In this regard, the United States should continue to seek new signatories for the Artemis Accords, provide more tangible ways to link Accords signatories to Artemis Program participation as a way of solidifying partnership relationships and benefits, and use the momentum generated from signatories' support of the U.S. goals and policies to translate that into support of U.S. goals for the Committee on the Peaceful Uses of Outer Space (COPUOS).

Use the expertise of domestic commercial and other nongovernmental stakeholders to achieve its international space diplomacy goals.

In support of the United States' engagement in international multilateral space diplomacy, particularly with regard to negotiations that may have domestic regulatory implications, it is important to engage domestic stakeholders to obtain their input so that the United States can help to provide sound leadership in these multilateral fora to develop pragmatic and workable solutions that are aligned with established best practices. In addition, the United States should harness the expertise in the commercial, academic, and nonprofit sectors to support engagement in both formal and informal multilateral dialogues that help to build and sustain international connections, relationships, information sharing, and confidence building.

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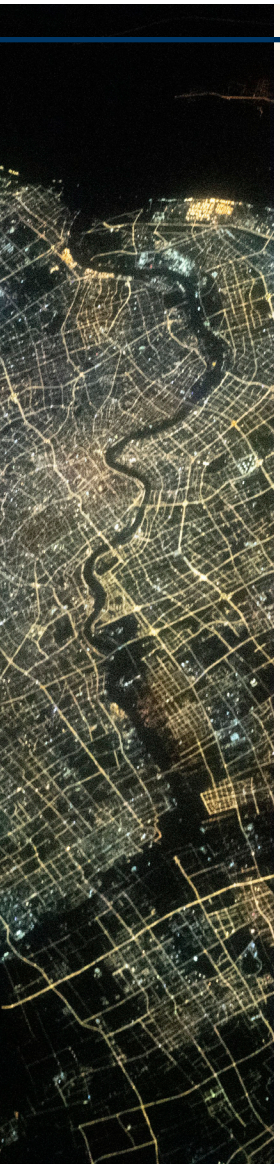

Engaging with China on Space Activities

Reassess the Wolf Amendment to allow for limited space engagement with China.

Working with the Trump administration, Congress should review and revise the implementation of the Wolf Amendment to increase NASA's engagement in space activities with China that support U.S. national interests. Priority areas for engagement include basic space science and research, robotic space exploration, human spaceflight safety, lunar search and rescue, and increased data sharing on space weather and orbital debris.

Expand the Space Safety Dialogue with Chinese actors.

The United States and China have shared interests in ensuring basic operational safety in the space environment, including both in low Earth orbit (LEO) and in cislunar space (including the lunar surface). Establishing channels for information sharing and promoting space safety practices can act to reduce the potential for misunderstanding that might lead to conflict while promoting stability in the operating domain that will support growth in space activities. This is particularly important in the context of national space traffic management and/or coordination initiatives. Dialogue of this type might be pursued in several ways, including: bilateral government-to-government discussions; informal civil society dialogues; and engagement in multilateral fora such as the proposed Consultative Mechanism on Lunar Activities at the United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS).

Increase understanding of the Chinese space sector.

Congress should work with the Trump administration to fund and carry out studies that systematically document and understand the structure and nature of the Chinese space ecosystem, how the industry is structured, the true relationships between the central government, the state-owned enterprises, and the private companies, the role of the provincial governments, how private capital operates in the Chinese space sector and how all of this relates to the space program priorities of the Chinese government.

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Ensuring U.S. Leadership in Space Exploration and Development

Sustain commitment to the Artemis program.

The Administration should reaffirm its commitment to the Artemis program and U.S. leadership in lunar exploration.. Technologically, the Moon is the gateway to Mars, and many international arrangements have been made under the Artemis program and Artemis Accords—the reneging of which would harm U.S. space leadership and space diplomacy. The Administration should work with Congress to establish bipartisan support for a sustained crewed lunar exploration program that serves as the cornerstone of further space exploration and development.

Continue to work with the international community to implement the Artemis Accords.

The principles of the Artemis Accords represent a practical approach forward to addressing several cislunar governance issues. Efforts should be made to continue to work towards the adoption of these Accords, including engagement with possible competitor nations. In addition to seeking new countries to sign the Artemis Accords, efforts should be made to coordinate and engage with existing members, including with options and opportunities in the Artemis program.

Continue multilateral engagement on space resources governance.

The United States should continue to positively engage in discussions at the United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS) and other multilateral fora to develop consensus principles to enable space resources activities. These principles can complement U.S.-led approaches like the Artemis Accords and serve a coordinating function.

Employ the U.S. Space Force to support increased Cislunar situational awareness.

While the United States should continue to observe its international legal obligations not to put military installations on the Moon or conduct military maneuvers there, there remains a role for the U.S. military to continue to help enhance cislunar situational awareness as a matter of spaceflight safety for the increased number of lunar missions.

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Improving U.S. Space Weather Capabilities

Maintain whole-of-government focus across administrations and with support from Congress.

When the space weather-focused agencies of the executive branch work in tandem with the authorizing and appropriating committees in Congress, it can result in more effective policy. For consistency across presidential administrations and continuity of purpose for missions, the implementation of the Promoting Research and Observations of Space Weather to Improve the Forecasting of Tomorrow (PROSWIFT) Act and the accompanying recommendations made by the Space Weather Advisory Group (SWAG) should guide the executive agencies. This includes ensuring adequate funding is made available for implementation.

Ensure continued data collection sources through the protection of space-, ground-, and air-based sensors.

The United States' solar observing satellites and other space weather observation infrastructure are aging, and unexpected failures could lead to gaps in data collection. As we go further into Solar Cycle 25, the erosion of capabilities across the solar observation fleet will only increase. In order to maintain data collection to advance monitoring and forecasting of extreme space weather, a pipeline of new space- and ground-based observing systems must be initiated.

Work with international partners to augment observations and research.

Similar to capacity in space exploration and R&D budgets, the United States spends the largest amount of money on space weather-focused science across the world. Yet, regional monitoring and capacity are necessary to better understand and mitigate the effects of space weather on localities around the world, ultimately also protecting U.S. assets and interests. U.S. leadership in these efforts can build global capacity and can work to augment capabilities rather than duplicate efforts.

Support the development of commercial space weather services.

Satellite companies, hardware manufacturers, researchers with operational concepts, and others are in the nascent stages of developing a commercial space weather enterprise. A delineation of what information and baselines the U.S. government will provide will go a long way to providing a stable innovation space for companies, while ensuring that commercial products meet the needs of U.S. space weather priorities.

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Maximizing Value from Earth Observing Systems

Support continuity of service for all Earth-observing satellite capabilities and continue to champion free and open data-sharing principles.

The U.S. government should remain committed through policy and funding to having an appropriate pipeline of essential meteorological satellites and should extend the same commitment to continuity of coverage for land observing systems. Further, the government should continue to adhere to the core principle of free and open by supporting technology and best practices designed to improve data discoverability and usability.

Enable commercial sector value-added services and promote a thriving American commercial remote sensing industry.

The U.S. government should include expanding public-private partnerships to increase the use and value of Earth observation data that is already being produced. The government should also continue to improve the regulatory environment for U.S. companies by ensuring that implementation of recent rule changes is carried out swiftly and with clear guidance. Industry and other stakeholders should be fully consulted to ensure that any additional oversight and licensing rules are updated as needs evolve. A further update of older legislation, such as the Land Remote Sensing Policy Act of 1992, may also be required to accomplish this.

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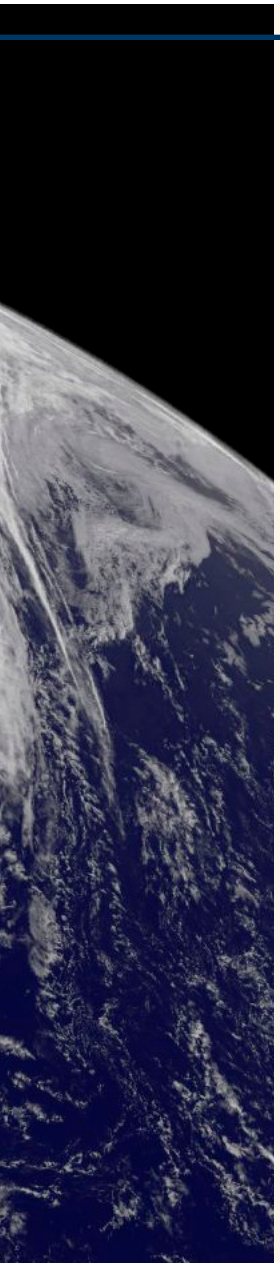

Leading on Global Planetary Defense Efforts

NASA and its national partners should be given the assets and resources to complete the task assigned by Congress of the cataloging and orbital characterization of near-Earth objects (NEOs) 140 meters and larger.

The larger NEOs have been detected, but many smaller yet still potentially threatening NEOs remain undetected. Finding these remaining NEOs will be harder and space-based telescopes appear to be the best path forward. NASA should be funded to mount these space-based NEO threat detection missions.

Clarify the existing rules—including rights and responsibilities—for any mission to divert or destroy an impending NEO strike, as well as establish the legality of using a nuclear explosive device for eliminating imminent NEO impact threats where no other options exist.

Legal issues of asteroid redirect missions are currently uncertain under existing international space law rules, and coordination and agreement on an international level should be sought. Additionally, the legality of the use of a nuclear explosive device for the largest and most urgent NEO threats should be agreed upon by countries before the Earth is faced with such a situation that requires a swift and coordinated international response. Proactive and results-oriented discussions at the international level, including through SMPAG and at the United Nations Committee on the Peaceful Uses of Outer Space, to address these questions is needed. The United States is uniquely placed to provide leadership in such discussions.

Achieve the goals of interagency, federal, state, and local preparedness outlined in the 2018 Near-Earth Object Preparedness Strategy and Action Plan.

These include strengthening and routinely exercising the communication of threats, and response and recovery efforts by agencies such as the Federal Emergency Management Agency and the Department of Homeland Security. Sufficient training and resources to these agencies is required to accomplish this preparedness task.

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Credit: NASA