

# DAY ONE PROJECT

## The Lunar and Asteroid Task Force Initiative

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December 2020

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## Summary

The next administration should launch a task force within the Office of Space Commerce to promote and achieve U.S. private space exploration on the Moon and on asteroids. This task force would encourage space civilianization on the Moon's surface and foster international collaboration around orbital debris removal.

A dedicated task force to assist private companies moving into the nascent lunar exploration and mining sector—similar to NASA's current Space Act Agreements and launch contracts—would help establish U.S. presence on the lunar surface and stimulate a U.S. space economy. State actors have been working on lunar technology, and it is imperative that we respond to their imminent presence on the Moon. The Federal Government, led by the White House and executed by the Office of Space Commerce, should undertake a comprehensive agenda and allocate federal funding for a new Lunar and Asteroid Task Force.

## Challenge and Opportunity

The global space industry is expanding rapidly; it is expected to grow from \$360 billion in 2018 to \$558 billion by 2026. The rapidly dropping cost of space launches has opened major pathways to democratize access to space. Some nation states—not all of which share our values—and startups are anticipating and planning for a \$1 trillion space economy in the next decade.

Several countries and private space companies are focused on lunar exploration, mining, and sustainable infrastructure such as in-space lunar manufacturing, which includes the robotic assembly of satellites and mining of helium on the Moon. There are venture capital-funded startups planning to send unmanned spacecraft to the Moon and developing new postage-stamp-sized thrusters that will use electric propulsion—instead of gas—to power rockets. These order-of-magnitude leaps in space activities underscore the importance of keeping American companies at the leading frontier of space exploration. The Federal Government should support and create opportunities to build domestic and lunar manufacturing capacity in the growing space industry.

Currently, the outer space legal regime is acutely ineffectual. Reforms are an imperative. Furthermore, the global consensus about space neutrality is rapidly eroding. The Moon has historically been widely considered a global commons akin to the open seas or Antarctica, not meant to be owned or exploited by any single nation or entity. However, on April 6th, 2020, the current administration released an executive order refuting that idea and suggesting a desire to pave the path for lunar dominance by American industries. The Artemis Accords signed in 2020 detail NASA's approach to lunar exploration; yet without better coordination, it seems likely that peaceful, sustainable development of off-world resources could eventually give way to competing claims.

## Plan of Action

The Lunar and Asteroid Task Force should be created within the Office of Space Commerce to accelerate the development and deployment of radically innovative space technologies on the surface of the moon or an asteroid. Task force members would be seasoned space experts, recruited from U.S. national security space agencies, NASA and private companies. In addition to supporting launch cost-reduction goals at private companies, a robust task force should drive widespread adoption of the sustainable development of off-world resources. For instance, the Lunar and Asteroid Task Force could participate in the strategic oversight of excavation, processing, and transportation of 35% of these resources for use in situ or sales on Earth, while leading a multilateral initiative to protect 65% of off-world resources from sales and exploitation.

To realize an innovative outer space with U.S. leadership, the Lunar and Asteroid Task Force should advise innovators, regulate rogue concepts and address acute market failures, such as colony establishment schemes, in the private space exploration domain. Federal resources and leadership and engagement with the commercial sector are imperative. Organizing the Lunar and Asteroid Task Force requires deep collaboration and four key recommendations to be effective:

1. White House leadership and coordination: The National Space Council (or its equivalent) within the White House should spearhead the initiative and drive progress throughout the executive branch. These activities will mobilize support in Congress, industry, science, and the public through an Executive Order (EO) to launch the Lunar and Asteroid Task Force and expand the charter of the Office of Space Commerce to make it the principal unit for space commerce policy activities within NASA. The EO would specify a six-month timeframe for identifying and removing federal barriers for current lunar and asteroid-focused companies.
2. Budget: Delivering on the aforementioned goals will require, at a minimum, a new budget line item of \$4.2M per year for the Office of Space Commerce to triple current spending on private lunar and asteroid programs over five years. With this funding, the United States can lead the way in space exploration, a priority that has always received bipartisan support. Limited federal funding can support U.S. efforts to take space exploration to new heights.
3. Increased non-NASA agency participation and use of other policy tools: All relevant federal agencies and offices<sup>1</sup> should use procurement, regulation, and contracts to support new lunar and asteroid technologies and assist domestic production capacity of lunar-bound tools and products.
4. Mobilization of non-federal actors: Academia, industry and international partners are critical to the success of the burgeoning space economy. The vast scope of technological applications underscores the importance of having a front office to engage with a wide

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<sup>1</sup> The National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, Defense Innovation Unit, National Reconnaissance Office, etc.

# DAY ONE PROJECT

variety of end-user industries: orbital debris, laser communications, satellite vendors, additive manufacturing, agriculture, robotics, cybersecurity and subsystem producers.

## Conclusion

Building on the 2015 U.S. Space Act that gave American companies the right to mine asteroids for profit, the next administration should establish a Lunar and Asteroid Task Force within the Office of Space Commerce. The utility of celestial natural resources to mankind is obvious, and the U.S. needs to influence these off-world activities. White House coordination, funding, participation of federal and non-federal actors would play an important role in U.S. leadership in exploring planetary bodies.

# DAY ONE PROJECT



## About the Author

**Ezinne Uzo-Okuro** is a 16-year career civil servant at NASA, with expertise in spacecraft systems and cross-functional leadership. She has contributed to Cassini, ELC, Orion/EFT-1, GPM, NICER and TESS spacecraft missions and several CubeSat projects, and managed multimillion dollar space communications programs. She holds a B.S. in Computer Science from Rensselaer Polytechnic Institute and two M.S. in Space Systems and Space Robotics from Johns Hopkins University and MIT respectively. She was a 2018 Presidential Leadership Scholar, and is a Harvard Kennedy School Dubin Fellow, an MIT Legatum Fellow and a Council on Foreign Relations Term Member. **The views/opinions expressed are those of the author and do not reflect the official policy or position of NASA or the U.S. Government.**



## About the Day One Project

The Day One Project is dedicated to democratizing the policymaking process by working with new and expert voices across the science and technology community, helping to develop actionable policies that can improve the lives of all Americans, and readying them for Day One of a future presidential term. For more about the Day One Project, visit [dayoneproject.org](http://dayoneproject.org).