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To Infinity and Beyond: Civil and Commercial Space Policy in the Biden Administration

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In times of political transition, space experts around the country thank their lucky stars that space policy is mostly bipartisan. Sure, there are occasional political lines drawn around the big stuff— like going back to the Moon or heading straight for the Red Planet—but for the most part, political ideology factors little into space policy. Space was a priority for the Trump administration, and the space community, regardless of political party, welcomed this renewed focus.

While President Joseph Biden may choose to prioritize different aspects of civil and commercial space, the team that led the Trump administration’s space policy agenda was full of technical, dedicated experts whose work during the last four years is broadly respected within the civil and commercial space communities. Despite the change in presidential administrations and political parties, it would be a mistake to erase the achievements of the previous administration.

Q1: Will the National Aeronautics and Space Administration (NASA) return to the Moon?

A1: The [Artemis](#) project is an immense effort to return U.S. astronauts—including the first woman—to the Moon. Returning to the Moon and developing and testing the capabilities needed to go to Mars are critical for the continuation of civil space exploration. Large government-led initiatives like Artemis spur innovation, develop new commercial markets, and inspire generations of new leaders. However, the 2024 deadline to land the next Americans on the Moon—set by the Trump administration—is considered by many to be perhaps overly ambitious and should be reevaluated to better match the realities of the overall fiscal environment as well as the safety and sustainability of the broader program.

Certainly, returning to the Moon will require consistent and sufficient funding over the next four years and beyond: a commitment that requires significant bipartisan support in a time of increasing political polarization. While Congress has been supporting the Artemis effort fiscally, it has not fully funded the Trump administration’s budget requests for the program. Congress has more recently [signaled](#) that they would welcome a reevaluated and more fiscally realistic timeline from the Biden administration. Even with an extended timeline, the Biden administration should stay the course the Trump administration laid out with the path to the Moon, and then on to Mars. The 2020 Democratic Party Platform [indicates](#) that this is currently the party’s plan, and Democrats should be wary of redirecting this course. Space programs are complex and require incredibly long lead times: as such, their budgets need to remain constant despite politics—otherwise they will simply never get off the ground.

Q2: What role will NASA play in Biden’s climate research plans?

A2: Over the last four years, Congress maintained NASA’s science and research [funding](#), despite widespread [rumors](#) that the Trump administration completely cut climate research from NASA and the National Oceanic and Atmospheric Administration (NOAA). With the Biden administration’s [pledge](#) to “make a historic investment in energy and climate research and innovation,” NASA may receive some additional investment that it can use to recapitalize on its climate change research and development programs. Any increase will be in addition to the almost [\\$7 billion](#) NASA received for science in 2020 (about \$1.9 billion of which was dedicated to earth sciences). To make substantial progress in fighting against climate change, the Biden administration will likely also invest time and resources across the U.S. government, not just in supporting NASA science and research initiatives.

Q3: What is happening with space traffic management, space domain awareness, and orbital debris mitigation?

A3: In the past year, there were several troubling [near misses](#) between non-maneuverable objects in space that could have threatened the safety and security of the domain. Traffic in space is [projected](#) to worsen in the next decade, and the U.S. government needs to develop tools and regulations to manage this foreseeable challenge. The long debate over which U.S. government agency should be responsible for commercial space domain awareness (SDA) and space traffic management (STM) was [settled](#) in the Trump administration in favor of the Department of Commerce’s Office of Space Commerce instead of the Federal Aviation Administration (FAA). As SDA and STM are increasingly pressing issues, the Biden administration should not put these missions on hold to rehash the old debate. The Office of Space Commerce will require support from the new administration to gain the authorities and budget to properly carry out its mission.

While the FAA could certainly handle much more of the effort through in-house expertise, there is no reason why a public good, such as an SDA network, could not be successfully contracted out to commercial partners and managed by the Department of Commerce (USDOC). A marketplace of data from civilian, military, and commercial sources to be shared, compared, and distributed to satellite operators is clearly needed for STM. This mechanism is critical if the Biden administration plans to continue fostering the space industrial base and expand U.S. presence in low Earth orbit (LEO). The Biden administration must work with Congress to fully fund the Office of Space Commerce and continue to allow the transition of the STM mission from the Department of Defense (DoD) to USDOC. The office needs both the mandate and money to properly pursue an integrated SDA and STM effort.

As for orbital debris mitigation, the Federal Communications Commission (FCC) introduced some much-needed [regulations](#) in 2020. However, on the truly controversial issues—where the debate is most heated between space sustainability advocates and private industry—the commission deferred to cast judgment or enforce stricter regulations. Specifically, the FCC did not shorten the rule that satellites must be deorbited within 25 years of the end of their mission to better preserve the space environment. In fact, many space sustainability proponents [believe](#) 25 years to be much too long, as many small satellites and other proliferated constellations—such as SpaceX’s Starlink—can have a lifespan one-tenth of that time or less. Industry has generally pushed back on these calls for a shortened timeline, as [many](#) satellite operators do not currently follow the 25-year rule. There are concerns from industry that this regulation could put a burden on industry to alter designs of planned satellites or stifle small satellites (smallsats) or microsatellites (microsats) that do not have the onboard propulsion needed to deorbit at the end of their lifetimes. This issue cannot be ignored, as it is predicted that tens of thousands of satellites will enter LEO over the coming

decade or shortly thereafter. Beyond the 25-year rule, there are many technically informed [proposals](#) of incentives and regulations to clear up the space environment that the Biden administration should evaluate. Without concrete regulations on the disposal of debris or end-of-life procedures, the likelihood of massive debris collisions that could threaten any burgeoning space economy will remain high.

Q4: What would a reinvigorated State Department look like for space?

A4: As the United States looks toward the Moon and Mars, it should not try to go it alone. NASA has had success with the [Artemis Accords](#), which promote multinational cooperation for lunar exploration and which gained nine co-signatories in its first year. Despite this success, the United States can and should [do better](#) in building relationships with established and interested space nations to pursue joint cooperation in future space exploration. A reinvigorated State Department would be able to aid NASA and other civil space offices in efforts to bring in new partnerships and strengthen existing ones. There is precedent for this: the Apollo program played a key role in foreign policy throughout the Cold War by showcasing the innovation potential of U.S. democratic values. Similarly, the partnerships on the International Space Station (ISS), particularly that of the United States and Russia, have been steadfast through its 22-year lifetime. The Artemis era should be seen as an opportunity to reinvigorate this same sentiment and global outreach. Space is an incredible tool of foreign policy, and NASA has the name and brand recognition to make strategic impacts across the world. Under the Biden administration, NASA and the State Department should collaborate to utilize the power of U.S. advances in space to counter rising or revisionist powers, empower emerging space nations, build new alliances, incentivize STEM education, and promote democratic values worldwide.

The State Department should also support a growing call for internationally agreed upon definitions and standards for safe satellite operations and new space missions, such as rendezvous and proximity operations (RPOs). Without common definitions and understanding, complicated multilateral agreements—such as arms control for space—will be difficult or even impossible to navigate.

Possibly most critical is a State Department that pursues arms control for space. Direct-ascent antisatellite (ASAT) tests have [increased](#) in the past decade, including by new countries developing this destructive counterspace capability. The international space community has often called to place a moratorium on the testing or the use [of Earth-to-space kinetic weapons](#) that could create space debris that would threaten all satellites in that orbit. The State Department needs to be a leader in addressing this if acceptable norms of behaviors are to be adopted by the international community. This means working with the other two largest spacefaring nations: China and Russia. However difficult this diplomatic work may be, it is necessary to have international consensus among the most expansive spacefaring nations to establish long-lasting norms that may be able to lead to distinct arms control measures.

Q5: What are the key bipartisan initiatives in civil and commercial space?

A5: Luckily for the space community, space trends toward bipartisanship more than many other federal concerns. One [loud, bipartisan cry](#) from the space community has been to keep the National Space Council intact and operating. This high-level, dedicated effort has facilitated significant focus on much-needed reforms and guidance for national security, civil, and commercial space efforts over the past four years.

Another popular bipartisan initiative is enabling the federal government to invest in the burgeoning commercial space market by purchasing services rather than buying systems. As shown at both NASA and DoD, purchasing launch services and buying remote sensing and satellite communications services can have a great effect on the national space industrial base. Continuing to pursue this model of purchasing will indicate that the government will be a long-term reliable customer and also invest in new space companies.

Q6: Are there any other initiatives the Biden administration should focus on?

A6: Trends [indicate](#) a decreasing or stagnant federal budget in the near future. NASA, along with other federal agencies, will need to better prioritize its projects to compensate for decreased funding. One way to increase the cost-efficiency of new research initiatives is by expanding upon the great success of the [Commercial Crew](#) and [Cargo](#) programs. By encouraging and providing seed money for commercial investment in space, NASA has been able to capitalize on commercial innovation and cost-sharing measures. The future of the International Space Station, as well as other major NASA programs, could benefit from continued or expanded commercial partnerships.

The Biden administration should support congressional action to remove the Wolf Amendment, which places strict limitations on U.S. cooperation with China in space as a penalty for egregious human rights abuses. Many space experts [decry](#) this legislation and warn that it hampers NASA's mandate to strive for international outreach and collaboration. Furthermore, it has not slowed the Chinese space program from developing and hitting some major civil space milestones, including several lunar landings, as well as the development of a national space station. The intent to "punish" China for its egregious human rights violations should be implemented via sanctions or initiatives by other federal agencies. Preventing NASA from cooperating with the Chinese space agency is only widening the gap of misunderstanding and distrust in the space domain.

Another complicated issue for the Biden administration is the need to bolster cybersecurity standards for space systems. In CSIS's annual [Space Threat Assessment](#) report, we identify several instances of adversarial cyberattacks or intrusions against U.S. space systems. As the government begins to rely more on smaller yet more proliferated satellites, cybersecurity standards must remain high. This is also true for commercial space systems, from which the government procures services. The Trump administration did release a [Space Policy Directive](#) intended to raise the level of cybersecurity standards; however, there were no concrete [measures](#) taken to develop and implement these standards for space systems.

Last, it is no secret that STEM fields—including those in the space community—struggle with diversity, equity, and inclusion. The Biden administration's initial appointees achieve an unprecedented gender parity and representation of people of color across the highest levels of government. This incredible achievement and initiative should not end with the initial appointments. Pursuing diversity and inclusion across the federal government should remain a national priority, including in STEM-focused agencies such as NASA. NASA, in particular, can play an enormous role through building and sponsoring diversity programs for STEM education, and by supporting an inclusive and respectful workplace. There is much to do to build a diverse and inclusive federal government, but the initial steps the Biden administration has taken should remain prioritized throughout the entirety of Biden's term.

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