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## JOURNAL OF ADVANCED MILITARY STUDIES

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### **Kim Jong United** How a Future North Korean ASAT Threat Makes Strange International Bedfellows and Novel Opportunity

### Second Lieutenant Max A. Schreiber, USSF

**Abstract:** While North Korea does not have a formal direct ascent antisatellite (DA-ASAT) weapon, its missile technology provides some baseline technology to make one, and a DA-ASAT program furthers the ruling Kim Jong Un regime's strategic goals. Thus, the United States should prepare for this threat now. This article argues that North Korean DA-ASAT weapon is a unique political-military challenge, in that China and Russia—traditional North Korean allies but major space-faring nations—are *also* threatened by this weapon because of the indiscriminate space debris it creates. This creates aligned interests between the United States, China, and Russia to stop a North Korean DA-ASAT program, and as this article asserts, the best way to do that is to cooperate in slowly advancing the North Korean space program with nonthreatening technology in return for the country abandoning DA-ASAT research. **Keywords:** North Korea, antisatellite weapons, diplomacy, Indo-Pacific geopolitics, strategic weapons, space

Ithough North Korea's emergent space program currently lacks antisatellite weapons, the pariah nation can use its substantial missile technology to start development of a direct ascent antisatellite weapon (DA-ASAT) and this effort would likely advance the ruling regime's interests. In North Korea, the military is the state: Its supreme leader Kim Jong Un, a tyrannical dictator, leverages the nation's weapons and missile programs to pro-

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tect his own power, to deter international meddling in domestic affairs, and to secure international concessions. A legitimate DA-ASAT—which is a missile launched at a satellite—would undoubtedly bolster this leverage. This is because DA-ASATs—whether through tests against dummy targets or intentional use—create high-velocity debris on impact, which haphazardly threatens *any* critical satellites in proximate orbit. And DA-ASAT use is of such political and military concern worldwide that even a test by a rogue state like North Korea could be rapidly destabilizing.

But as this article argues, a North Korean DA-ASAT program would manifest a novel opportunity for world cooperation. Russia and China—who are traditional North Korean allies but also major spacefaring nations—are as equally threatened as the United States from any debris caused by a North Korean DA-ASAT test (or worse). Thus, all three of these "great powers" have a mutual interest in stopping North Korean DA-ASAT prematurely.<sup>1</sup> While there are many approaches to take, the best option now is to offer Kim's government nonthreatening and unadvanced support for his incipient space program in exchange for DA-ASAT abandonment. This allows his regime to build a relatively illusory space program in line with his political goals without threatening stability on the Korean Peninsula or the great powers' space assets.

### Introduction

North Korea has been particularly effective at challenging U.S. political leaders for generations. Since the Korean War, the Kim regime has ruled tyrannically over its people, threatened allied forces in Korea, isolated North Korea from the world, and won aid from the great powers—all while maintaining its dictatorial rule.<sup>2</sup> The focal points enabling this are North Korea's nuclear and ballistic missile programs. After decades of secretive development, North Korea has a nuclear arsenal that experts assess totals close to 50 warheads.<sup>3</sup> And its ballistic missile program boasts numerosity and range—including multiple intercontinental ballistic missiles (ICBMs) that can reach America's West Coast.<sup>4</sup>

The primary purpose of North Korea's nuclear and ballistic missile programs is not the weapons themselves, but the political power they secure. They are strategic weapons that protect the ruling regime and deter conflict.<sup>5</sup> North Korea knows the United States, China, and Russia have far larger nuclear arsenals and more powerful conventional forces. But the Kim government is comprised of rational actors: He recognizes any offensive use of nukes or missiles would likely result in "complete annihilation" of his government.<sup>6</sup> Instead, these weapons earn the destitute state international leverage and recognition—invaluable tools for the tyrannical government. With these tools, the Kim family protects its own rule, fortifies political support, deters meddling in domestic affairs, and exerts diplomatic concessions.

Like missiles and nukes, DA-ASAT could fulfill these same objectives: On impact, these weapons obliterate the target satellite into thousands of pieces of small space debris, which travel at more than 15,000 miles/hour in orbit. That

debris field is unpredictable and—depending on the number of pieces, and the size and trajectory of each piece—can destroy more satellites. In fact, space debris is so dangerous it has a scientific name, the Kessler Syndrome.<sup>7</sup>

And while DA-ASAT weaponry may not threaten lives, its devastating second- and third-order effects are of grave strategic concern. Between the initial launch and the subsequent debris, a single DA-ASAT strike "could devastate a society [like America's] that increasingly relies on satellites for daily functions critical to the civilian and economic well-being."<sup>8</sup> Because the U.S. military knows its space assets are an integral first-strike target for adversary war planning, a surprise DA-ASAT launch—even a test—could be interpreted as the precipice of major war justifying an immediate large-scale mobilization or kinetic response. This is why DA-ASATs "possess a [great] capacity for transforming a crisis into a war."<sup>9</sup>

Fortunately, North Korea does not possess a DA-ASAT and it has not yet publicly announced an intent to create one.<sup>10</sup> But that is likely to change eventually: DA-ASATs enhance the Kim government's strategic objectives of regime protection and deterrence, and the country also has some baseline capabilities from its missile program to get started. But because of the indiscriminate nature of space debris and political instability from DA-ASAT use, a North Korean DA-ASAT uniquely threatens all the great powers—who right now are the largest players in space and beneficiaries of space operations—and thus incentivizes collaboration on stopping such a weapon.<sup>11</sup>

### The Purpose of North Korea's Strategic Weapons

What motivates North Korea's strategic weapons programs? Above all, the top priority for Kim is regime survival, as it was for his father and grandfather—and the threat from their nuclear and missile programs are essential to this goal.<sup>12</sup> Kim has publicly linked these weapons to national achievement, for which the government should be rewarded with consolidated political support.<sup>13</sup> And the Kim regime based its "legitimacy" on the intertwined success of North Korea's economy and its strategic weapons, especially its nuclear program.<sup>14</sup> Heavy military spending is the backbone of the nation's economy and its military activities—whether that be missile tests, parades, or conflict—and they are also how Kim demonstrates strength.<sup>15</sup> This is why North Korea, a nation of only 26 million people, has the world's fourth largest standing military and spends one-quarter of its gross domestic product (GDP) on defense.<sup>16</sup> And Kim's belief in this military-first approach—and especially its emphasis on strategic weapons—hardened after dictators like Muammar al-Qaddafi in Libya lost power after relinquishing their nuclear weapons programs.<sup>17</sup>

Separately, North Korea's strategic weapons are a bargaining chip to limit international interference in domestic affairs and to win diplomatic concessions. North Korea legitimizes the threat of attack through tests, rhetoric, and operations. Cumulatively, North Korea's missile and nuclear programs are one big deterrence operation, designed to "discourag[e] states"—primarily the allied forces—"from . . . military aggression."<sup>18</sup> The nuclear warheads also liberate North Korea to engage in provocations like missile tests without fear of significant military retaliation, as the threat of those weapons makes most escalatory behavior counterproductive.<sup>19</sup>

Allied forces are not the only target of North Korean leverage: North Korea and China have a complicated but friendly relationship—some call them "bitter allies"—due to China's history of diplomatic and economic pressure toward the Kim regime.<sup>20</sup> Now, North Korea's nukes and missiles discourage such political intimidation and protect Kim from being a puppet ruler for either China or Russia.<sup>21</sup> Further, these weapons elevate Kim in negotiations with Russia and China, whom North Korea still relies on for trade and aid.<sup>22</sup>

North Korea also meticulously promotes its strategic weapons to justify international accommodation of Kim's regime. Its nuclear program and stockpile are advertised publicly, unlike other smaller nuclear players like Iran and Israel who try to keep their nuclear assets covert.<sup>23</sup> And North Korean missile tests are orchestrated as veiled messages to the international community.<sup>24</sup> Then, in the press, Kim pits "diplomatic" and "hardline" members of his government against each other to argue over preemptive use, maximizing leverage in international negotiations.<sup>25</sup> This is theater; however, the crafted information operations associated with North Korea's strategic programs demonstrate they are political weapons just as much—if not more so—than they are military threats.

### A Serious North Korean DA-ASAT Program Is Plausible

Given Pyongyang's strategic motivations, a North Korean DA-ASAT weapons program is a plausible if not likely risk, because it can create new international leverage and further fortify the regime's rule. While intentional use of a DA-ASAT weapon remains doubtful by North Korea, the capability or even the construction of sites and facilities that indicate an *intent* to start a DA-ASAT program would further Kim Jong Un's primary strategic objectives.

Moreover, North Korea already has a capable ballistic missile program to kickstart DA-ASAT development, and the political-military costs of such a program to North Korea are relatively low. The biggest challenge would be obtaining a tenable aiming device for the DA-ASAT weapon—something only the great powers and India have built.<sup>26</sup> And while China and Russia maintain friendly relations with North Korea, they would be unlikely to share this technology given the risk North Korean DA-ASAT poses to their own satellites. But North Korea could obtain the aiming technology through other means, since the nation is a criminal enterprise that has mastered black-market activity to achieve strategic objectives.<sup>27</sup> Accordingly, U.S. policy makers should prepare now for this new threat.

### International Leverage

A serious DA-ASAT program would win North Korea additional international leverage. This is because space assets are critical to global markets and security,

especially for the United States, China, and Russia.<sup>28</sup> Without functioning satellite networks, the world stalls: Financial transactions, shipping and logistics, joint military operations, navigation, and communications would be at best ineffective and at worst impossible.<sup>29</sup> But North Korea is a rogue nation with nothing substantial "at stake in the global economy"—so its government lacks the same incentives to remain peaceful in space.<sup>30</sup>

And while the threat from North Korea's nuclear weapons and missiles is concentrated at the allied forces, the threat from its DA-ASAT would be comprehensive: Any debris from a kinetic North Korean DA-ASAT threatens the economy and national security of China and Russia, too, even if America or its Far East allies would be the likely primary target of an initial strike. Moreover, a DA-ASAT strike is much less likely than a DA-ASAT test, which threatens all the great powers equally as the debris effects are random. This contrasts with North Korea's nuclear threat calculus, which is a significantly larger concern for America than Russia or China because of the direct antagonistic relationship with the United States.

Thus, North Korean DA-ASAT deterrence is inverted in comparison to nuclear weapons. With nuclear weapons, the *individual* danger from retaliation after a first strike deters their use. But with DA-ASAT, the *shared* danger every space power has from its use creates the deterrence effect.<sup>31</sup> Therefore, while the United States is the only great power averse to North Korea, China and Russia nevertheless have a substantial interest—due to their satellite networks—in preventing Kim from getting a functioning DA-ASAT.<sup>32</sup> This gives North Korea precious political capital at the international table if it can threaten legitimate DA-ASAT capabilities.

### Sustain the Regime and Manifest Domestic Political Support

Separately, a North Korean DA-ASAT program would further bolster the Kim regime and help foment, through propaganda, sustained patriotism.

A DA-ASAT would be a palpable scientific and military achievement for the North Korean government to champion. The military is the Kim government's most important messaging tool, and the nation's nascent space program is a centerpiece of the modern government's manipulation. North Korea's propagandists incorporate space both into dire rhetoric about the danger posed from allied forces as well as peaceful messaging about North Korea's excellence and Communist values.<sup>33</sup> A DA-ASAT would be especially strong fodder to compliment this propaganda effort: It would visibly project strength to the North Korean people and fit perfectly in Kim's infamous military parades.<sup>34</sup> Only four nations thus far have successfully tested a DA-ASAT weapon; Pyongyang doing so would put North Korea in elite company.<sup>35</sup> And finally, both the domestic and international reaction to a North Korean DA-ASAT would not only flatter Kim personally but be promoted relentlessly as proof he's an important world leader.<sup>36</sup>

### **Technological Capability**

Currently, North Korea does not possess a DA-ASAT, and it has no publicly acknowledged plans to develop one.<sup>37</sup> Its nuclear program was a decades-long slog due to stiff international resistance, intense scientific research, the program's secrecy, and the materials and technology required.<sup>38</sup> But North Korea already has some of the baseline capabilities to start a DA-ASAT program, such as manpower, missiles, and a committed criminal enterprise for funding and technology smuggling.<sup>39</sup>

If a nation has a capable ballistic missile program, conversion to a *basic* DA-ASAT is—in the grand scheme of military research—not cumbersome.<sup>40</sup> Satellites in low Earth orbit (LEO), which includes the *International Space Station* plus American communication and intelligence, surveillance, and reconnaissance (ISR) satellites, are at risk from DA-ASAT using "missiles that are much less capable than the launchers needed to deploy the satellites."<sup>41</sup> North Korea has multiple missiles capable of reaching into LEO.<sup>42</sup> For example, its Hwasong-18 ICBM—with a ~9,300 mile range on Earth—can squarely reach any satellite in LEO.<sup>43</sup> And the nation maintains multiple space launch facilities where it could conceivably test and develop a direct ascent ASAT weapon.<sup>44</sup>

The major challenge for North Korean DA-ASAT is a reliable aiming device.<sup>45</sup> While "any space-faring nation should be able" to develop the sensors for sufficient homing devices, the lack of a formal DA-ASAT program in North Korea implies little to no intention of developing such technology itself.<sup>46</sup> In fact, only the great powers and India have successfully tested a DA-ASAT, implying this technology is still too complicated or costly beyond the world's most advanced military powers and economies.<sup>47</sup> North Korea is unlikely to be able to produce the technology. Its ballistic missiles-the epicenter of North Korea's military and economy-have significantly lower probability of kill than the missiles of advanced nations; any DA-ASAT from North Korea would likely have similar accuracy issues.<sup>48</sup> And even though both China and Russia are North Korean partners, they are unlikely to cooperate on or support a North Korean DA-ASAT homing device because a North Korean DA-ASAT would threaten their own satellites. However, North Korea has other means of obtaining this technology: The state is "more actively engaged in criminal activity than any other nation" and relies on its black-market enterprises to directly support state goals.<sup>49</sup> It could therefore employ a variety of tactics—espionage, hacking, kidnapping of scientists, bribery, or blackmail-to steal the technology from one of the great powers or India.

### The Political Incentives for North Korean DA-ASAT Now

A DA-ASAT program aligns with North Korea's strategic objectives and the nation, through its missile program, has some of the capabilities needed to make such a weapon. So why has North Korea not started a DA-ASAT program yet?<sup>50</sup> For one, North Korea is not a rich or developed nation with a surplus of resources to spread across swaths of military projects. And the Kim regime is rational about what it perceives as the best return on military investment.<sup>51</sup> As can be inferred by their decision-making, Kim believes a mix of nuclear and ballistic missile programs best served his nation's strategic objectives. And to some extent, these programs have effectively protected his regime.<sup>52</sup> But North Korea's nuclear programs are not as effective recently at winning international concessions, after a near decade of American-led diplomatic and military efforts to deter and reduce these threats.<sup>53</sup> In response, Kim has taken more aggressive postures and military action—and a DA-ASAT is a new and effective threat to recapture bargaining power.<sup>54</sup>

Separately, the Kim regime views the possession of a unique strategic weapon by another great power—especially the United States—as an urgent threat to its own security.<sup>55</sup> With "[m]ajor advanced countries engag[ing] in space development" in preparation for "space warfare," Kim knows North Korea is vulnerable in this domain.<sup>56</sup> And during the last couple decades, the United States, China, Russia, and India have all successfully tested DA-ASATs.<sup>57</sup> The North Korean regime will want to ensure it is at least competing in this relatively new domain of war, even if it cannot match the capabilities of great powers.

A DA-ASAT program also offers Pyongyang significant messaging benefits: ASAT development would support the perception that North Korea is building a competitive space program. An actual test would be even more damning for space and world stability. Just as nuclear weapons "began as the exclusive domain of the superpowers" before "spread[ing] gradually" to North Korea, Kim will likely want a DA-ASAT soon too.<sup>58</sup> DA-ASAT tests by Russia, China, and India during the last two decades generated significant political and military reaction worldwide, which is the type of adverse attention Kim enjoys and can use to his political advantage domestically.<sup>59</sup> In short, important nations develop DA-ASATs—and thus a DA-ASAT program is a way for the Kim regime to demonstrate its governing bona fides.

Finally, North Korea does not have much to lose in starting a DA-ASAT program. It remains isolated from much of the world and does not rigidly adhere to international law or norms.<sup>60</sup> Its economy has been decimated after decades of sanctions on its nuclear program.<sup>61</sup> And, China, Russia, and India's DA-ASAT testing offers implied permission to the Kim regime to start a program as well.

### The Novelty of a North Korean Direct ASAT Threat

Since World War II, the United States has traditionally taken an active leadership role in any major international political or military conflict, with Russia and China either adverse or uninvolved.<sup>62</sup> While these nations have sometimes found themselves on the same side of a national security issue, like the negotiations for the Joint Comprehensive Plan of Action in Iran, the pertinent threat usually is not directed at all three nations.<sup>63</sup> But a North Korean DA-ASAT program is a novel "tragedy of the commons" that threatens the security of all global powers jointly and simultaneously.<sup>64</sup>

Regardless of the initial target, the resulting orbital debris from any successful DA-ASAT strike by North Korea would "threaten or destroy space assets of all nations and not just the intended target."<sup>65</sup> If systems on Earth break down due to damage above, the global economy and functioning society are at stake.<sup>66</sup> Critical intelligence and military satellites for the great powers remain vulnerable to debris too.<sup>67</sup> This space debris does not disappear and it remains a threat without any human control "until the gradual effects of orbital decay terminate" its trajectory.<sup>68</sup> For China and Russia, the game theory of their approach to North Korean DA-ASAT is also simplified: Neither can rely on friendly relations to escape the consequences of North Korean DA-ASAT use because the resultant debris is indiscriminate.<sup>69</sup>

Separately, a North Korean DA-ASAT attack on U.S. assets could even be interpreted as a preemptive act of war, like a DA-ASAT attack by China would be perceived now.<sup>70</sup> Space is central to joint U.S. military operations and integral to U.S. early warning—and American adversaries prioritize space assets as early targets in any major conflict.<sup>71</sup> Even accidental damage to critical satellites from debris or an unannounced DA-ASAT test could require the United States to rapidly mobilize other military assets as a precaution.<sup>72</sup> And Russia and China, depending on the context and available information, could do the same in reaction. North Korean DA-ASAT use is especially volatile because it shares a border with Russia and China, and it has a direct adversarial relationship with the United States. If a North Korean DA-ASAT is ever launched, the security of all three great powers is at risk.

### Responding to the Moment: Stopping North Korean DA-ASAT before It Starts

North Korea has a lengthy history of conducting ballistic missile tests and developing nuclear weapons in violation of international law and United Nations Security Council sanctions.<sup>73</sup> These provocations gave the foreign policy and military establishment in the United States, China, and Russia significant experience in dealing with and studying the Kim regime. And all three nations have tried different approaches at different times to mitigate the threats posed by North Korea.<sup>74</sup> Given a North Korean DA-ASAT is something to plan for and prevent now, what can the great powers do?

First, any law-centered solution to North Korean DA-ASAT is going to be difficult to agree to and unlikely to succeed. North Korea has already demonstrated it does not respect international law.<sup>75</sup> Plus, political friction over the Korean Peninsula between the United States on one side and China and Russia on the other often makes enforcement against the Kim regime, downstream of any agreement, difficult.<sup>76</sup> The infancy of space law is an additional handicap: The great powers have struggled to update the 1967 Outer Space Treaty or agree

on a new legal framework altogether for space, even though the importance of the domain has increased substantially since then.<sup>77</sup> And a narrower legal agreement specific to North Korean DA-ASAT is unlikely to ease negotiations, since the great powers would rightly be worried about precedential effects it would have on their own DA-ASATs and space operations. Finally, any permanent legal commitments by the great powers to stop North Korean ASAT requires spending valuable political capital—a difficult ask given North Korea's DA-ASAT program is still notional.

Second, the great powers could draw a "red line" and jointly warn Kim Jong Un that a North Korean DA-ASAT program is a nonstarter and would result in severe diplomatic and even military consequences. This approach could work given the overwhelming power and resources shared between the United States, China, and Russia. And these nations have demonstrated an ability to cooperate on North Korean sanctions over its nuclear weapons program and missile tests in the past.<sup>78</sup> The problem, however, is with enforcement: China and Russia cannot be trusted to enforce sanctions against the Kim regime even when they publicly support them.<sup>79</sup> So if North Korea challenged the red line, it would fall largely on the United States to impose consequences—similar to the current dynamics regarding North Korean nuclear and missile sanctions.<sup>80</sup> But the political cost to enforce a red line on North Korean DA-ASAT —particularly with military action—could be insurmountable for American leadership, because the voters have not internalized the risk from DA-ASAT as closely as they have for nukes.<sup>81</sup>

Third, the great powers could try making DA-ASAT programs "taboo" by creating a new international norm of nonuse.<sup>82</sup> In 2022 the United States announced it will voluntarily forego DA-ASAT weapons testing in reaction to Russia's 2021 direct ascent ASAT test, citing the national security and economic risks from space debris.<sup>83</sup> The goal of this policy is to set an example for other countries to pause their own DA-ASAT testing so that new debris is minimized. However, this approach has several fatal defects. For instance, Russia and China could gain a strategic advantage over the United States by doing more DA-ASAT testing and creating better weapons, although both could suffer negative international consequences from this. Additionally, North Korea is literally one of the last countries on the planet that cares about adhering to international norms and customs. Finally, North Korea does not have the same economic and societal consequences to fear from space debris as the great powers, so they do not "gain" much from nonuse. There is little incentive for Kim to respond positively to this policy. Accordingly, it is unlikely-even in the implausible scenario where Russia and China also decided to stop testing DA-ASAT weapons-that a nonuse taboo would on its own deter Kim from an ASAT program.

The great powers could try a "wait and see" approach where they do not take any new action against North Korean DA-ASAT until they detect indicators of such a program (or intent to start one). But this approach carries a heavy risk, because if Kim Jong Un starts such a program—especially publicly —he will be unlikely to reverse course, given it could be perceived as backing down and thus threaten his legitimacy. Further, Kim Jong Un and his father went to great lengths to keep their nation's nuclear development covert; because DA-ASATs carry comparable strategic interest, Kim Jong Un could go to great lengths to shield indicators of DA-ASAT from the world, too, until the nation makes substantial progress on building one. The risks from waiting to address North Korean DA-ASAT are significant, and the great powers would likely benefit from a proactive approach.

Therefore, in the near-to-medium term, "carrot" diplomacy—trading the Kim regime assistance and/or technology to improve other facets of its space program in exchange for abstention from DA-ASAT development—is likely the best approach. Right now, North Korea has an incipient space program that Kim intends to advance and accelerate—but he has not made any public commitment to DA-ASAT specifically. There are other space capabilities North Korea can invest resources in: the country's single ISR satellite in orbit, for example, is unadvanced and some claim it does not work.<sup>84</sup> The great powers have an opportunity to trade to North Korea what the United States considers unadvanced and unthreatening satellite technology if it induces Kim to swear off a DA-ASAT program. North Korean leadership has accepted international aid before to fix its own governing failures, and it has also modified its weapons programs to win diplomatic goodwill.<sup>85</sup> Furthermore, since Kim's primary strategic goal is protecting his own rule, he gains from such a trade because he will still achieve progress for North Korea's space program by cooperating.

This approach has some challenges, but they do not outweigh its initial promise. For example, it would likely require either China or Russia to deliver the satellite technology and aid, given their working relationship with Kim and established supply chains to Pyongyang-plus the current strained political relationship between the United States and North Korea. Fortunately, China has demonstrated a recent openness to cooperating with the United States on Korean Peninsula policy when it brings stability to the region, which North Korean DA-ASAT disarmament would.<sup>86</sup> Separately, cooperating with North Korea on space will likely meet fierce political resistance in the United States, much as President Donald J. Trump's summits with Kim Jong Un initially did in 2018 and 2019.87 But this is an issue of spending political capital. If the president believes preventing North Korea from getting a DA-ASAT is a worthy endeavor, then they can commit the nation to this type of agreement even if it is politically unpopular. President Barack H. Obama demonstrated this with his Iran deal in 2015 (formally known as the Joint Comprehensive Plan of Action).<sup>88</sup> Further, the great powers would have to decide how any North Korean DA-ASAT policy integrates into their individual strategic objectives with North Korea. But this is an issue under their control, and it is mitigated because DA-ASAT disarmament does not require the United States, China, or Russia to depart from their shared interest in stability for the Korean Peninsula.

Finally, the carrot approach would likely require "sticks"-e.g., punish-

ment—if North Korea does not uphold their end of any ASAT bargain, as has happened with both their missiles and nuclear programs. However, the North Korean space program is so new that the great powers can use incentives to have outsized influence on how it matures. Thus, prioritizing cooperation now and worrying about punishment later is a fine trade-off, especially since the space program—unlike the existing nuclear program—does not present any threat in its current form. Of course, punishments for DA-ASAT development should not be dismissed in case Kim does pursue these weapons—but they do not have to be addressed at this early stage when even Kim can benefit from cooperating on DA-ASAT disarmament.

Accordingly, while there are many approaches to consider for preventing North Korea from starting a DA-ASAT program, the best approach now for the great powers is to try to work with North Korea by trading some modest space technology to modernize its program in exchange for disarmament.

### Conclusion

A North Korean DA-ASAT program is a plausible national security challenge for the great powers given the Kim regime's strategic objectives of protecting its own rule, deterring international interference in domestic affairs, and providing leverage for diplomatic negotiations. However, the debris and instability risk posed by North Korean DA-ASAT creates novel alignment between the United States, Chinese, and Russian interests and incentivizes cooperation among traditional geopolitical rivals. Given existing political realities and the nascency of North Korea's space program, the best near-to-medium term approach to preventing a North Korean DA-ASAT is for the great powers to trade Pyongyang nonthreatening satellite technology, which Kim can champion as evidence of his leadership on space.

### Endnotes

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