Transcript — Artemis and the Space Warfare Frontier

Christian Smith: Hello and welcome to this podcast from Geopolitical Futures. I'm Christian Smith. The return of humans to the moon has yet again captured the hearts and minds of many around the world. Yet while space travel manages to capture imaginations, the geopolitics of space is something much less well understood. From satellites to mining on the moon, the Artemis program is very much the start of a new frontier in geopolitics, a frontier that has actually been going on for quite a while. So as the Orion capsule and its four astronauts speed their way back to Earth, this week on the podcast, Geopolitical Futures chairman and founder George Friedman is with me as we discuss the geopolitics of space. George, hello. First question. There's a geopolitics of space?

George Friedman: There is. It's called astropolitics and it was cooler, I suppose, but it's called astropolitics because right now space is one of the main arenas of warfare. It is something that is influencing wars on Earth. There is therefore the possibility of wars in space as well. And some are emerging with anti satellite systems. So at this point, the most important thing in warfare are drones and missiles. And those drones and missiles have to be targeted, and they're being targeted for the most part from space. So when you look at the Ukraine war and you look at the war in Iran, both were fought to some extent from space

Christian Smith: and still are, of course. I mean, let's start with that and let's start with how these wars are being fought and these satellites. Anybody who may have listened to our podcast last week on what's going on in Iran will be familiar with some of this and we let's bounce off that. If you didn't listen, then I encourage you to go back and check it with these recent wars in particular Ukraine and Iran. I mean, the importance of satellites, from anything like GPS to the Internet has been pivotal. We've seen recently what's been going on with the lack of starlink for Russians in Ukraine. Can you just re explain how much war is now for dependent on what's going on in space as well?

George Friedman: Well, the virtue of space is the high ground. In a war, you would hold the high ground. One of the reasons is that you can look down and see things. At this point, the sensors on satellites are so good that they can read a license plate from outer space, tell you what a license plate is. Therefore, if they can transmit that information to troops on the ground, these troops have tremendous intelligence as to what's going on. So American satellites as well as European satellites in Ukraine could see where the Russians are massing troops. They could then take the much smaller army of the Ukrainians and suggest to them where to send blocking forces. They could also, as they got drones and stuff, could identify large masses

of troops and target them, give them the information, in some cases directly to the weapons to where to go. So at this point in Iran, for example, we're looking at wars that are primarily fought with drones. So for example, the Straits of Hormuz, they talk about opening it 10 years ago, 20 years ago, opening it with landing Marines, having a land fight, kicking away the enemy, forcing them out. 20 miles on each side is straight. It would be opened at this point with satellite intelligence. You can see easily a trawler coming through the straits. You can transmit that information directly to the drone, fire the drone from 500 miles away and knock out that ship. So the fundamental issue here is that where wars used to be fought with infantry, armor, artillery, they're now being fought more by long range weapons. So opening the Straits of Hormuz by landing Marines is not going to solve the problem because, because hundreds of miles away, maybe even a thousand, there are missiles and drones being prepared that once they have a target, they can take them out in a very short period of time.

Christian Smith: I mean, of course, as much as anything, war is about intelligence. Do you expect that these satellites, and a lot of this is talked about as being low Earth orbit. Do you think that they're going to become a potential battlefield soon? I mean, striking satellites from one side of the other, striking satellites to take out their intelligence.

George Friedman: They're already war fighting systems in the sense that in order to transmit information to the Earth, you have to use some sort of beam, some sort of electrical or light or something interfacing that light, blocking it, disrupting it, all that makes the satellite useless. And there's a lot of things like that going on. The starlinks were not hurt as satellites, but the downlinks, they were severely affected. And therefore the GPS systems and so on that they had and saw and what have you could not transmit to Earth. So those wars are already going on. There are also anti satellites in orbit that are designed to either directly hit another satellite or to send some energy beams at the satellite to try to destroy it. So certainly this is becoming a central feature of warfare. It has not yet evolved to the point that mass battles are carried out. But it is true, given the nature of intelligence, and he who is in low Earth orbit, the lowest orbit outside the atmosphere, has the ability to see, locate, transmit the information to troops on the ground and carry out warfare has become the essential dimension of warfare.

Christian Smith: I mean, let's just say for the, for a moment that Ukraine didn't have access to the satellite information that the U.S. and Europe and others have been providing it. Would it have been able to fight the war not just in the way it has done, but at all, really? I mean, is this completely essential now or you lose?

George Friedman: Well, given the fact that the Ukrainians had a smaller military, given the fact that the Russians were not using satellites nearly as effectively as the Ukrainians were, this was intelligence being given by the Americans and the European satellites. By the way, they're able to know where the attack is coming, mass their smaller troops in the path of it, and block the Russian advance. So if you don't know where they're coming from, you have to have a large front of troops dug in and ready to take the battle. Ukrainians didn't really have that, particularly at the beginning of the middle of the war. And so they can put their forces where they need to be. The satellites are so accurate now that even if you're engaged in a small fight in a little woods outside of a village, you can see enemy soldiers creeping up on you, you can see weapons and so on, you can transmit information about that to the troops. And even on a smaller level, you're fighting no longer in the dark, but with information. The Ukrainians have put this to very good use. The Russians, who really do have excellent satellites as well, have not seemed to have integrated that very well with the troops. They may be sending it to the high command, but the high command takes too long to figure it out and send down to troops in combat. The ability to transmit that and have it intercepted directly by officers on the ground gives the Ukrainians a significant advantage

Christian Smith: in many ways. What we haven't seen for a long time, of course, but if we were to see a war between two major and two satellite powers, in particular, let's say Russia and the US or the US and China, I mean, how likely do you think it would be that all of a sudden you'd have these two sides firing missiles into space to knock out these satell.

George Friedman: I think that would be one way to knock out the satellites. Another way would be to maneuver your own satellites into either a blocking position or, as I said, crashing into the satellite that you wanted to. So there are sensor satellites built with what we'll call telescopes. They're not that. That view deeply into the earth and see very small things, and those have to be destroyed So I would argue that if the United States and China went to war, the first phase of that war would be carried out in space. If you blind the enemy in space, well, then the only things can be seen is aircraft which can be shot down, or the troops themselves waiting as they have for millennia, for the enemy to show up. So really the center of gravity of war is always intelligence. Knowing where the enemy is, what he's doing and what he has. And that intelligence no longer comes out from commandos creeping up closer to them. It comes from the satellites. So if the United States and China went to war, and I strongly suspect both have anti satellite systems available in space, the first battle would be blinding the other side.

Christian Smith: And then, I mean, that sort of makes me think of two questions. I suppose. One would be, will we therefore see an escalation in the sort of defense of these satellites in

terms of whether that might be missiles designed to strike down other missiles or some form of missile related base in space?

George Friedman: Well, the first thing you do is create a redundancy. The reason there are so many satellites in orbit now, in low earth orbit, and there are thousands, is redundancy. You take out one satellite, another satellite can use it. Secondly, we are I think, developing maneuverable satellites, satellites using AI that sense something coming in a direction and maneuver. I suspect there are satellites in space that have laser beams that they can use to shoot the other guy. So it's hard to tell precisely what is happening in space because this is something that's classified material that you could imagine. You, you want that to be surprise. At the same time, in basic principle we understand what's going on, which is that low Earth orbit, LEO as it's called. It's the area just above the Von Carmen point, which is the boundary between Earth's atmosphere and the vacuum of space is about 60 miles up. And from 60 miles up you can see an awful lot.

Christian Smith: I suppose the other question then that flows from there is what happens if you have the start of the war, as you say, both sides are attacking, let's begin in space. There surely must be contingencies or plans where the next war is actually fought without any satellites or facilities in space because they've been knocked out?

George Friedman: Well, that is the battle. If one side has satellites and the other side doesn't, then the other side that has the satellites knows a great amount more about the enemy, his location, his capabilities and so on. And he has a tremendous advantage because knowing what the enemy is doing 50 miles away, perhaps getting ready for an attack or something like that being able to identify drones that are being fired at you and use anti drone systems to destroy them. All these things require at this point satellite information. So when you get down to it, the very close quarters, perhaps the satellites are not as useful because they can't give. You don't have the time to get the intelligence. But anywhere at this point, wars are conducted at distance. So it used to be that clearing the Straits of Hormuz would be a naval problem. With two naval ships within a couple of miles of each other at most engaging each other in warfare. At this point, the attack would probably come from a land base. If we try to force our way into the Straits of Hormuz. It is said that Russian intelligence is providing satellite intelligence to the Iranians. I don't know if that's true. There have been accusations that the Chinese are doing that. I don't think that's true. That's something the Russians said they were doing, but there was a whole argument over who is giving them the intelligence. At any rate, they seem to have some intelligence. They're able to block our own missiles coming in sometimes and they're able

to target us and vice versa. So if they didn't have these capabilities and we had them, or virtue, the one with satellite intelligence would have a massive advantage in the war.

Christian Smith: Take a moment to follow and rate us on your preferred podcast platform. For video versions of the show and More, subscribe on YouTube eopoliticalfuturesgpf. Click the link in the description below for access to our free newsletter. And for a limited time you'll receive an instant download from our special collection on the Middle East. In this select issue you'll find insights on Turkey's regional ambitions, Iran's nuclear and ideological dilemmas, and the role these nations play in regional power dynamics. I suppose what happens is, and anybody who has looked into how these satellites work is that there's already a bit of an issue with low orbit and where satellites are. It's getting a bit busy up there. There are incidents and potential for satellite collisions and that sort of thing. You would think that should some form of battle happen up there, bits of satellite flying around, it may impact other ones as well. I guess the part, the question I want to ask really is part of a wider question of like geopolitics on Earth, there are sort of, there are sort of rules, not necessarily there are rules in terms of laws and that sort of thing, but also rules in terms of what you might describe as the laws of the jungle and, and just ways things Work in geopolitics. Space as a new frontier seems a bit were unprecedented in a literal sense. I mean, are you getting George's sense of how the competition is being run between nations in space? Are there rules emerging?

George Friedman: I think there are understandings. There are no rules. So if, for example, in the case of the United States, the Chinese began attacking your satellites, disrupting them, we would probably know that it was the Chinese doing it. We would then think there's a reason they're doing this, and if they blinded us, we would at least be certain that they had a reason for doing so. And that reason might have been to open a war with the United States. So, as in all things, the combat can be seen. Even if you've just lost control of your satellites and you're suddenly having your sensor satellites, the ones that watch the Earth flick off the screen and 400 of them were taken out at the same time or very close time, you'd be very suspicious of what was going on. The satellites you had in orbit, some of them are viewing other satellites in orbit would be identifying them. But losing control of the satellites, losing access to them, puts you in a position where you know you're under attack. You're not quite certain. I think you are certain pretty much who is attacking, but you're not quite certain what to do in response. And that means you're going to be shooting in the blind. And one thing that will happen in the case of a war is that instruments on Earth, the troops on Earth, the weapons on Earth will be agile. They'll be constantly moving, so that if you take out the satellites, the enemy will not know where they are. So the wars are won and lost on Earth in the sense that they must destroy the

other guy's capabilities on Earth. But with these satellites, the ability to do this has become extremely great at this point. And over the past 20 years, they've merged. In fact, the first reason we wanted a space was not the excitement, because it was a hard thing to do rather than the easy thing to do. As Kennedy said, we wanted a space based on the principle of mutual assured destruction. The reason there was never a nuclear war is that both sides had radar systems far enough away from the attack that they would have at least 10, 15, 20 minutes of warning of satellites in that period of time, usually say a half hour at best. If possible, you could launch your own missiles. The United States, the Russians, the Russian United States. This was why the wars were never fought. Mutually assured destruction was based on the ability to see what the other Guy is doing detect the satellites before you lost the ability to counter, to destroy the other, whatever viewers there are. What happened was this was being carried out by radar. Radar systems can be jammed, of course, and they were very vulnerable to attack as well. So during the period when we started launching satellites, interestingly enough, the first Russian satellite and the first American satellite were launched within a few weeks of each other. So suddenly both of them had the satellites. I've always wondered whether there's a collaboration to keep mutual assured destruction in place. Now you could sense from a launch from space, you could see them, you could give that information to Cheyenne Mountain in the United States, which is the base base we do have, and launch a counterattack. So as radar became less reliable, space became the alternative. And space even now is an instrument in detecting nuclear warfare. Seeing the satellites, seeing the missiles coming from distance. And we've never had a nuclear war because of the principle of mutual assured destruction. It's a terrible thing to say that the ability of one side and both sides to destroy each other, okay, kept us from doing it. And when we launched those satellites, the Russians and the Americans, they were not yet sensor satellites. They couldn't see the Earth, but they were the principle of being able to put satellites in space. Very quickly thereafter, we launched a series called corona, which were able to send data back to Earth not as efficiently as it would Ned. So when we asked the question, how come there was never a nuclear war, in spite of all the tension, hostility and danger, the United States and Russia, where you would have expected them to go to war, you'd expected them, given the tensions. Well, neither side could afford a nuclear war. They fought by proxies in Vietnam and Congo and everywhere else in the world, but they never engaged each other. So in a certain odd way, these satellites, mutually assured destruction, first the radar systems, then the satellite systems, was the kept us from nuclear war.

Christian Smith: Now, we've spoken a lot about, well, so far on this podcast, really, about how space will impact warfare and the geopolitics of that. But there's more to it than that as well, isn't there? And let's look at the moon. Obviously, the Artemis crew are on their way back

from the moon now, but the moon, the idea of the Artemis program is to send people back to the moon again and potentially with a long term strategic goal of having a permanent base on the moon. Why is the moon so interesting?

George Friedman: Well, at a certain point in the not too distant future, low Earth orbit will be too dangerous. First, there's a lot of junk in Space tremendous amount of junk. A failed satellites fragments and satellites that are no longer useful. And the possibility of losing one of your satellites or many of them by hitting garbage is high. Secondly, as anti satellite systems come out, the probability that we will start any sort of war without first trying to knock out the other guy's satellites is high. Low Earth orbit is very crowded with satellites and increasingly no one has tried it yet. Increasingly going to be the first area in which combat takes place. Now you have a choice in combat. Either disperse your forces. You can't do that in low Earth orbit. You can't disperse them. They'd be useless. It is also the energy it takes. You can be agile, you can maneuver constantly. Well, that can be done. But you get out of orbit and while you're maneuvering, you can't sense the Earth. We're going to take cover. Now, it's hard to take cover in space, but given the nature of warfare, it's not difficult to take cover on the Moon. Okay, that be the place, take cover. So when you take a look at what's low Earth orbit, middle Earth orbit and stationary orbit, stationary orbit means it maintains the same place on Earth as it rotates. And they're all different sorts of satellites that these would be also vulnerable as well as the United States and China are both developing space planes. That is in the distance between the Earth and the Moon is what's called cislunar. I don't know why it's called cislunar, but that's what it's called. And in that space we've got fighter planes who will be battling each other and so on. So at this point, we're not quite there yet, but we're at the point where cislunar space, the space between the Earth and the Moon, is not becoming a safe haven for these satellites, putting them on the moon makes them more protected. On the other hand, from the Moon you only see one side of the Earth at a time, only one half of it. And this brings in more complex issues of having satellites in use at various very high orbits and so on and so forth. So it's not a simple matter. But at the same point on the Moon, where there are what's called lunar tubes that are not as frigid as the Moon and fairly high temperatures and seem to be airtight. So you could pump it full of oxygen, and there is oxygen on the moon in the soil and you can free it. So you could do all these things, carry them out. And the first question is, okay, how do people respond to living on the Moon where there is no outdoors, where the gravity is minuscule and the human body is built to live with Earth's gravity. These are all things we don't know and we'll try to find out. But one of the reasons to do this and one of the reasons why the Chinese are looking at it and one of the reasons why the Russians used to be looking at it and don't seem to be doing it now, is that if you want to conduct warfare from sensors such as satellites to

see what's going on, the Moon is a place where you might do that and survive. Which then means there'd be wars on the moon between the various countries that want to knock out the others. And so it becomes a new dimension of warfare. But this is not different from, for example, why the Europeans discovered North America or South America, I should say. The Portuguese and the Spanish were fighting a war with each other. And the key was access to India, because India's wealth was being transferred. The Portuguese had access, the Spanish didn't. But the Spanish had a theory that the Earth was round. And this is what funded Columbus when he went to visit the Queen to try to get money. He happened to bump into South America, the Caribbean, actually, and discovered that. And that rapidly became arena of war as well between the Spanish and the Portuguese and so on. And so the history of mankind is the history of discovery and then fighting over discoveries and using discoveries for national power. It's not a pretty picture, but it's a reality.

Christian Smith: Yeah, there's a lot of parallels here, isn't there, between the European conquest of parts of America, even thinking of the Seven Years War, for example, as well, and the fact that that was fought away from or partly away from the UK and France. I actually also can't get the image out of my head of the Austin powers film where Dr. Evil sets up a moon base. That is my image personally, for what this moon base will look like. The moon's not just a strategic asset, though, really, is it? As well, there's suggestions that we'll have a lot of energy and minerals that countries increasingly want.

George Friedman: Well, there is that thought. I don't think we've really explored the moon very much. You know, if you land in Texas, you won't find what's available in Russia, for example. So it's a large area. It's not been explored, but it seems to have water in the South Pole, a great deal of it, but also in the soil, oxygen, hydrogen and other minerals. So it has minerals. They can be Utilized, they can be used to live on the moon. So it appears the wealth of the moon is unknown. It may well have tremendous wealth. Who expected North America and South America to be as wealthy in terms of minerals and everything else in agriculture as it turned out to be? So we really don't know the moon. We've explored it in the sense of landing there and knowing that a human being survived for a few days on the moon, but we don't know much more about that. And so Artemis is going to be showing that we can get to the moon and get back to Earth, but also that we can put small colonies on the moon and leave them there for a period of time and see how that works out. So rather than rushing as Columbus did, the New World discovery is there and it took many decades for the rest of the Europeans to get interested in it. But that same way it's a step by step thing. And Artemis is unique in that it is intended to land humans on the moon for extended periods of time.

Christian Smith: I mean, obviously a lot of this sounds quite literally like science fiction. I mean, how far away do you think we are from something like this, George? From establishing a permanent base on the moon for example. And for these sorts of space related space linked wars taking place, I'd say

George Friedman: decades, but not too many. Remember, human beings engage in warfare and in warfare everything is at stake. And as low Earth orbit becomes untenable and other dimensions between the Earth and the moon become untenable, will go there. There is nothing that causes invention f than war. So why do we have nuclear weapons at this point? The United States was desperate to find a solution other than invading Japan and scientists came up with that. So one of the tragedies and realities of the human condition is that war can be the most creative period that you find. Extraordinary things come out of it. We are not at war, but we have been ever since the invention of nuclear weapons, constantly in fear of war. And therefore Artemis and others. Not urgent, but not spending any time that we don't need to do.

Christian Smith: Absolutely. I mean we've talked about what could happen. We haven't talked so much about the players or we've touched on them. I mean the obvious ones I suppose here are the US, China and Russia. But there are many other countries as well which are involved with space. They might have satellites or they might have had astronauts go to, to space. There's a Canadian on the, on the Artemis mission right now. I mean, how do you see this, this competition playing out? And I suppose wider than that is Is, is this a fundamental change in the nature of geopolitics? Is space where the great game of the 21st or 22nd century will take place?

George Friedman: Well, it's already taking place. I mean, the Iranians are set to have a satellite in space. Not clear who launched it. They're set to have it. The Russians allied with them clearly have satellites and appear to be giving the Iranians that sort of data. Any number of nations have put up satellites. India has put up a good many, and it has nuclear weapons. The Israelis have nuclear weapons and satellites. And so a number of nations have done this. This is no longer just the superpowers. These are other powers as well. And given the fact that war on Earth is historically a commonplace thing, it is not some amazing thing came out of nowhere. Even smaller states that have the ability to have some capability of doing this are putting satellites into space and linking them to this. And therefore what happens is in the same way that the Western hemisphere became a sphere of warfare after it was discovered, war is going to be fought from space. There's tremendous advantages from the intelligence given, and then there'll be a battle for who controls the space. And so this is the logic of the unconditioned. There are people who say they would like it not to be this way and that it's evil.

That it is. Well, that it's evil, but it is that way and it's going to stay that way. And so we have this issue,

Christian Smith: and I guess, George, building on that, I mean, do you see this as just an extension, a big one, but an extension of the way geopolitics works, and it's much like finding a new continent, or do you think this will fundamentally change how, how geopolitics works?

George Friedman: When we humans discovered from the eastern hemisphere that there was a western hemisphere warfare, fundamentally changed. For the United States, the command of the sea was by far the most important thing. As the Europeans started to discover India and trade with India, naval warfare became critical. Where wars had previously among the Romans primarily taken place on land, suddenly the seas in control of the seas became very important and have remained important for centuries. Okay, the same thing with space. From space you can reach many places, attack many places, defend many places in many different ways. And so for the United States, for example, the foundation of our national strategy was Admiral Mahan, who in the 19th century said command of the oceans was the most important thing for American security. We live between the Atlantic, this vast ocean, the Pacific and other vast ocean. We have the Canadians of the north, the Mexican south, they're not going to invade us. So long as we have command of the sea, we're safe. And remember, we only went to the First World War when the German U boats started sinking ships at sea. We only went into World War II when it seemed like it was dangerous to be there because of Pearl Harbor. They tried to knock us out of the Pacific. So when you take a look at how warfare evolved in the 16th century, we'll say it evolved into ocean warfare. And you can't survive in the ocean just walking around and having a good drink and stuff like that. It's a hostile environment. This is also a hostile environment. There is no water, there is no air and all these things. But we have a unique and not necessarily appetizing ability to adjust to bad circumstances in times of war, and we do that. So, yes, space, which also has geography because there are many planets out there and so on and so forth, will become the domain, a domain of space. Just as ground war warfare remains important in warfare, naval warfare is critical in warfare, air warfare is critical. Space warfare is. So it goes on

Christian Smith: a new theater then. George, as always, thanks very much for your time. Thank you out there for listening as well. We'll be back again next week with another podcast, but until then, you take care and goodbye. You can find all of our expert geopolitical analysis@geopoliticalfutures.com.