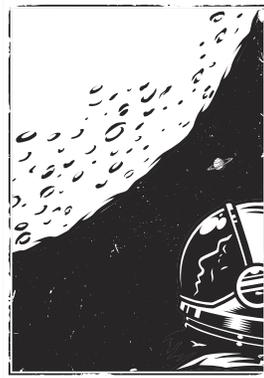


# CANADA AND THE ARTEMIS ACCORDS

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On October 13, 2020, the Canadian Space Agency, along with civil space agencies from the United Kingdom, Italy, Australia, Japan, Luxembourg, and the United Arab Emirates signed bilateral agreements with the United States National Aeronautics and Space Administration (NASA). Since then, Ukraine's space agency has also signed on. These agreements are known as the [Artemis Accords](#).

The Accords set out principles to guide the cooperation of civil space agencies in exploration beyond Earth's orbit, including the Moon, Mars, and asteroids. States must sign on to participate in the U.S.-led Artemis program.

Participation in Artemis is a central component of Canada's space strategy. But Canada has yet to adopt a coherent framework of the principles, values, and commitments that will guide this strategy. The government is currently holding [public consultations](#) that will shape this vision for decades to come. Canadians are invited to participate, with a deadline of March 31, 2021.

## WHAT IS THE ARTEMIS PROGRAM?

Artemis is a new exploration program with commercial and international partners, intended to create "a sustainable and robust presence on the Moon" while preparing for a mission to Mars. When it began, it aimed to have the "first woman and the next man" touch down on the lunar surface by 2024, and a lunar

base established by 2030.

While there are indications that this timeline is no longer feasible, the program is forging ahead. The Artemis Accords are intended to set out rules of conduct for the partners to ensure maximum cooperation and progress.

## ARE THE ARTEMIS ACCORDS A TREATY?

The Artemis Accords are not a treaty, but bilateral agreements between participating agencies and NASA that reflect international “political commitments.” These agreements, however, do have broad applications and implications. Signatories commit to implementing these principles in their own activities, as well as in the activities of all entities contracted to act on their behalf. Principles apply to all “civil space activities” conducted “on the Moon, Mars, comets, and asteroids,” including surfaces, sub-surfaces, and in all orbital positions between these bodies.

As a series of bilateral agreements drafted by the United States, the Accords were struck outside of the traditional treaty-making process, which is typically organized through the United Nations. They are not legally binding nor do they establish international law. However, by codifying a shared interpretation of how existing principles of international law are to be applied to activities on the Moon and beyond, they may have significant, long-term implications that go beyond their original scope.

## WHAT ABOUT INTERNATIONAL LAW?

The Artemis Accords provide an interpretation of how the broad principles laid out in the Outer Space Treaty (OST) apply to civil (and by extension commercial) space activities beyond Earth’s orbit. They also affirm the need for compliance with the OST and subsequent treaties that form the basis of international law in outer space. The Accords promote peaceful activities, the registration of space objects with the United Nations, no harmful interference, and the provision of emergency assistance. They encourage transparent national policies and plans, and promote cooperation through common technical standards for interoperability and the release of scientific data.

However, the Accords do not adhere to the Moon Agreement, which has been signed by only 11 states; Australia is the only signatory to both. Adopted by the UN General Assembly in 1979, the Moon Agreement elaborates on how the OST applies to activities on the Moon and other celestial bodies, and declares that the Moon’s natural resources are “the common heritage of mankind.” It calls for the establishment of an international regime to govern the exploitation of the Moon’s resources, similar to the one that governs the international seabed.

The Artemis Accords do follow the April 6, 2020 U.S. Executive Order “Encouraging International Support for the Recovery and Use of Space Resources.” This order denounces the Moon Treaty and insists that space is not a global commons, opening the the door to vastly expanded public- and private-sector activity on the Moon.

## KEY ISSUES

### *Extraction of resources*

If humans are to exist permanently on the lunar surface and travel beyond, they will need to use extra-terrestrial resources. Commercial entities are also interested in exploiting these resources. The governments of the United States, Luxembourg, and the United Arab Emirates have adopted legislation granting private commercial companies the right to own and acquire such resources. But international law is unclear about the right to extract resources in outer space. The Outer Space

# THE ARTEMIS ACCORDS

## PEACEFUL PURPOSES

At the core of the Artemis Accords is the requirement that all activities will be conducted for peaceful purposes, per the tenets of the Outer Space Treaty.

## EMERGENCY ASSISTANCE

The Artemis Accords reaffirm NASA's and partner nations' commitments to the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space.

Additionally, under the Accords, NASA and partner nations commit to taking all reasonable steps possible to render assistance to astronauts in distress.

## PROTECTING HERITAGE

Under Artemis Accords agreements, NASA and partner nations will commit to the protection of sites and artifacts with historic value.

## ORBITAL DEBRIS AND SPACECRAFT DISPOSAL

Under the Artemis Accords, NASA and partner nations will agree to act in a manner that is consistent with the principles reflected in the Space Debris Mitigation Guidelines of the United Nations Committee on the Peaceful Uses of Outer Space.

Moreover, NASA and partner nations will agree to plan for the mitigation of orbital debris, including the safe, timely, and efficient passivation and disposal of spacecraft at the end of their missions.

## TRANSPARENCY

Artemis Accords partner nations will be required to uphold this principle transparency by publicly describing their own policies and plans in a transparent manner.

## REGISTRATION OF SPACE OBJECTS

The Artemis Accords reinforces the critical nature of registration and urges any partner which isn't already a member of the Registration Convention to join as soon as possible.



## INTEROPERABILITY

Therefore, the Artemis Accords call for partner nations to utilize open international standards, develop new standards when necessary, and strive to support interoperability to the greatest extent practical.

## RELEASE OF SCIENTIFIC DATA

NASA has always been committed to the timely, full, and open sharing of scientific data.

Artemis Accords partners will agree to follow NASA's example, releasing their scientific data publicly to ensure that the entire world can benefit from the Artemis journey of exploration and discovery.

## SPACE RESOURCES

The ability to extract and utilize resources on the Moon, Mars, and asteroids will be critical to support safe and sustainable space exploration and development.

The Artemis Accords reinforce that space resource extraction and utilization can and will be conducted under the auspices of the Outer Space Treaty, with specific emphasis on Articles II, VI, and XI.

## DECONFLICTION OF ACTIVITIES

Avoiding harmful interference is an important principle of the Outer Space Treaty which is implemented by the Artemis Accords. Specifically, via the Artemis Accords, NASA and partner nations will provide public information regarding the location and general nature of operations which will inform the scale and scope of 'Safety Zones'.

Notification and coordination between partner nations to respect such safety zones will prevent harmful interference, implementing Article IX of the Outer Space Treaty and reinforcing the principle of due regard.

Treaty includes a non-appropriation principle that is applied stringently to the Moon, but not specifically to its resources.

Interpreting international law in a way that favours extraction rights, the Artemis Accords assert that “the extraction of space resources does not inherently constitute national appropriation under Article II of the Outer Space Treaty, and that contracts and other legal instruments relating to space resources should be consistent with that Treaty.”

### *Deconfliction*

One of the Accords’ more novel ideas is “deconfliction of activities” on the Moon. The Accords call on partner organizations to publicly disclose or notify others of the location of their activities. The intent is to coordinate activities so that each site is protected by a “safety zone” that prevents interference by the activities of other parties, while also showing proper concern or due regard for others. To avoid any perception of appropriation, the Accords suggest reasonable limits on the size, scope, and duration of such zones, and reiterate the principle of free access.

As the Accords note, the rules for safety zones, which seem like a sensible approach in a hazardous and fragile environment, are not yet sorted out, leaving [many](#) practical questions unanswered. There are also political concerns. In the absence of prior consultation and international coordination beyond the signatories to the agreement, or a mechanism for conflict resolution, deconfliction could bestow absolute rights on first arrivals, who could, in effect, carve the Moon into different national or economic fiefdoms. In the absence of additional safeguards and guarantees for international access, losers in this scenario could include late arrivers, Earth-locked states, and scientists.

### *Heritage*

At the moment, the Artemis Accords are the only international mechanism that exists to protect outer-space heritage, defined as “sites and artifacts with historic value.” However, Artemis partners only pledge to preserve the remnants of human activity. The Moon itself is not considered part of the “common heritage of humankind” with cultural and historic value worthy of protection; the Accords are silent on preserving the lunar surface and natural objects. As well, there is an inherent conflict yet to be resolved, because the lunar craters with resource value are also believed to hold much of this human history.

### *Who benefits?*

The history of human space activity has been marked by the sharing of scientific data, which can ultimately benefit all humans. This approach is preserved in the Artemis Accords, which commit partners to “releasing their scientific data publicly to ensure that the entire world can benefit from the Artemis journey of exploration and discovery.”

But the Accords do not require any additional sharing of benefits. For example, there is nothing in the Accords that commits partners to measures that might mitigate the technological and resource inequality that has long plagued the international community. Thus, they go against the requirements of the Moon Agreement and sentiments expressed in international fora, including the 50<sup>th</sup>-anniversary meeting of the first United Nations Conference on the Exploration and Peaceful Uses of Outer Space in 2018.

### *Who has a say?*

In 2019, U.S. Vice President Pence declared that “the rules and values of space are written by those who have the courage to get there first and the commitment to stay.” Those rules and values are in the bilateral agreements signed between the United States and its Artemis partners. But the effect of the agreements goes beyond the signatories to set in motion the normative interpretation of international law for all activities on the Moon.

This process leaves out not only Earth-locked countries, but other global space powers with lunar

ambitions, in particular, China, Russia, and India. While more states will no doubt join the Artemis program, U.S. domestic law currently bars NASA from cooperating with China. Russia sees the program as too America-centric. Instead, it has signed a memorandum of understanding to cooperate with [China](#) on lunar research facilities.

While the Accords commit to multilateralism, including discussions on resource extraction at the UN Committee on the Peaceful Uses of Outer Space (COPUOS), the process that established the Accords may add tension to an already contentious debate. The end result may be competing interpretations and frameworks, and a continuation of the unequal logic of [coloniality](#)—“a structure of control and influence that impacts social, political, cultural, and even imagined conditions of the world.”

#### *What about military activities?*

“Peaceful purposes” is the pillar of the OST and a core principle of the Artemis Accords, which confirm that “cooperative activities under these Accords should be exclusively for peaceful purposes and in accordance with relevant international law.” But the Accords apply only to civil space activities conducted by member civil space agencies.

The OST clearly reserves the Moon and other celestial bodies “exclusively” for peaceful purposes, banning military bases, weapons tests, and military manoeuvres, but permitting the use of military personnel and equipment for peaceful exploration. The Moon Agreement would extend these provisions to orbits around the Moon.

We know that military interests are extending more deeply into space. The U.S. Space Force is planning capabilities for surveillance and domain awareness in [cislunar](#) space—the area beyond the highest satellites of geostationary orbit and the Moon—with an eye to protecting civil, commercial, and strategic interests. Recent [controversy](#) over the interest expressed by the U.S. Defense Advanced Research Projects Agency in manufacturing capabilities on the Moon for dual-use space infrastructure points to the possibility of legal loopholes and political posturing that have facilitated such rampant military use of space in Earth orbit.

## NEXT STEPS FOR CANADA

Canada’s participation in Artemis clearly complements its domestic space policy. The 2019 [strategy](#) for national investment and activities in space prioritizes niche contributions to space exploration that benefit Canadians. And while Canada has not adopted legislation or made policy decisions on the extraction and use of resources in outer space, the 2019 [Mines and Minerals Plan](#) calls for policy to support new frontiers for mining, including space. The Artemis program, in turn, stands to benefit from Canadian expertise in space robotics and medicine, and from Canadian financial contributions.

What Canada currently lacks is [a vision](#) of the fundamental values and governance that should guide its engagement in space. Such a vision should govern collaboration with others, rather than flow from participation in the Artemis Accords. As the details are fleshed out, Canada—and the other partners—must ask some important questions and be prepared to insist on commonly accepted international principles and interests. A top priority should be the preservation of the Moon and the rest of space as a commons that is exclusively peaceful, remains freely accessible, and benefits all humankind. All partners should remain committed to multilateral diplomacy and an ethos of inclusion—in practice as well as in principle. These values should also be at the fore of Canada’s domestic space strategy going forward.

Silence today is acquiescence tomorrow. Have your say [here](#), by March 31, 2021.

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