

The New SPACE RACE

The United States will return to the Moon and travel to Mars, and may create a military space force.

A new space race is beginning, and with it, the United States is aiming to push forward its development of new technologies that may soon find their way into government systems, defense programs, and consumer products. President Donald Trump told U.S. troops in California on March 13 that the United States will be returning to the Moon and traveling to Mars, and that the U.S. military needs a new branch, focused on outer space. "My new national strategy for space recognizes that

space is a warfighting domain, just like the land, air, and sea," Trump said. "We may even have a Space Force." According to Rick Fisher, senior fellow with the International Assessment and Strategy Center, "President Trump understands the new strategic importance of space. The Obama administration refused to acknowledge its strategic importance, and as a consequence, our adversaries gained eight years to develop their strategic projection into space." The main challenger to this push is the Chinese Com-

munist Party, which runs its space programs under its military, the People's Liberation Army, and is developing new forms of space-based weapons designed to disable or destroy key technologies essential to U.S. defense. The new competition to develop economic opportunities within the Earth-Moon system, and eventually to reach Mars, could lead to innovations in farming, sustainable energy, and other sectors that the world has not yet known. This could again solidify the United States as a leader in innovation and in the global economy.

EARTH



STRATEGIC SATELLITES

Strategic satellites are crucial for both military operations and national security, used for military GPS or communications.

ORBIT

CONSUMER TECHNOLOGY

The push to develop new technologies will likely have a trickle-down effect that will create new consumer technologies and products, as was seen in the "silicon revolution" of the 1950s and '60s.



SPACE SOLAR PANELS

Solar energy will be crucial to any orbital or planet-based structure. The increased focus on solar could bring technological advancement both in space and on Earth.



FUSION ENERGY

Many countries are looking to fusion as a clean and more advanced alternative energy source. Helium-3, which is scarce on Earth, could be mined on the Moon to fuel fusion power plants, creating a major industry.

TECHNOLOGICAL WARFARE

President Donald Trump could secure the United States as a leader in innovation with his new space policy, as researchers develop new technologies for an outer-space economy and space military operations, as well as a mission to Mars. This is part of technological warfare, which is a push by nations to achieve dominance in technological development, especially in military technology. The goal of the top nation is to stay decades ahead of its adversaries in terms of military capability. As military technology advances, the older technologies can then be released to the consumer and economic markets.



President Donald Trump announced on March 13 that the United States will go to Mars and possibly will create a military space force.

MILITARY SPACE OPERATIONS

The U.S. military will need to develop technologies and methods for fighting wars in harsh interplanetary environments.

SPACE FORCE

Facing growing security threats, the United States may soon have a dedicated military branch to defend U.S. interests in outer space.

SPACE WEAPONS

New vehicle weapons, emplacements, and small arms for use in space will need to be developed—as well as those with the capability to function on Mars, and beyond.



NUCLEAR WEAPONS

Nuclear weapons could be placed in space so that attacks would be difficult to intercept or counter.

LASERS

These multiuse weapons can be used to blind or disable satellites.

ELECTROMAGNETIC PULSE

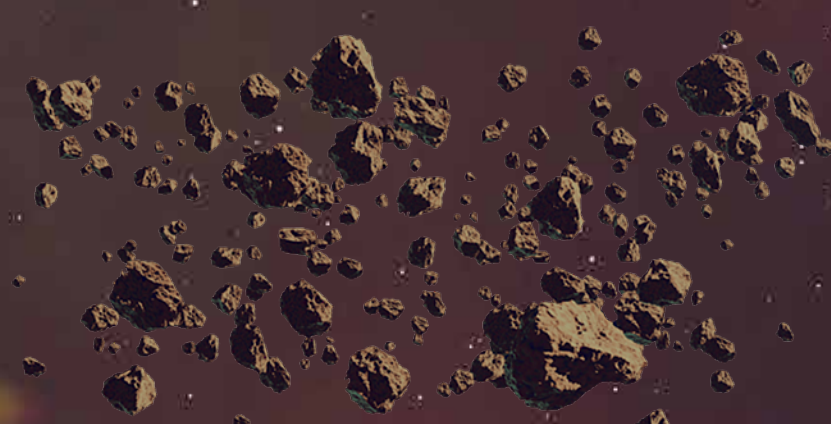
Detonating nuclear weapons in high orbit could generate an electromagnetic pulse to destroy electronics in a targeted country.

COUNTERMEASURES

Space-based sensors and interceptors capable of tracking and destroying missiles will be important for defense.

CIVILIAN SATELLITES

Civilian satellites are used for civilian products such as communications services and television broadcasts.



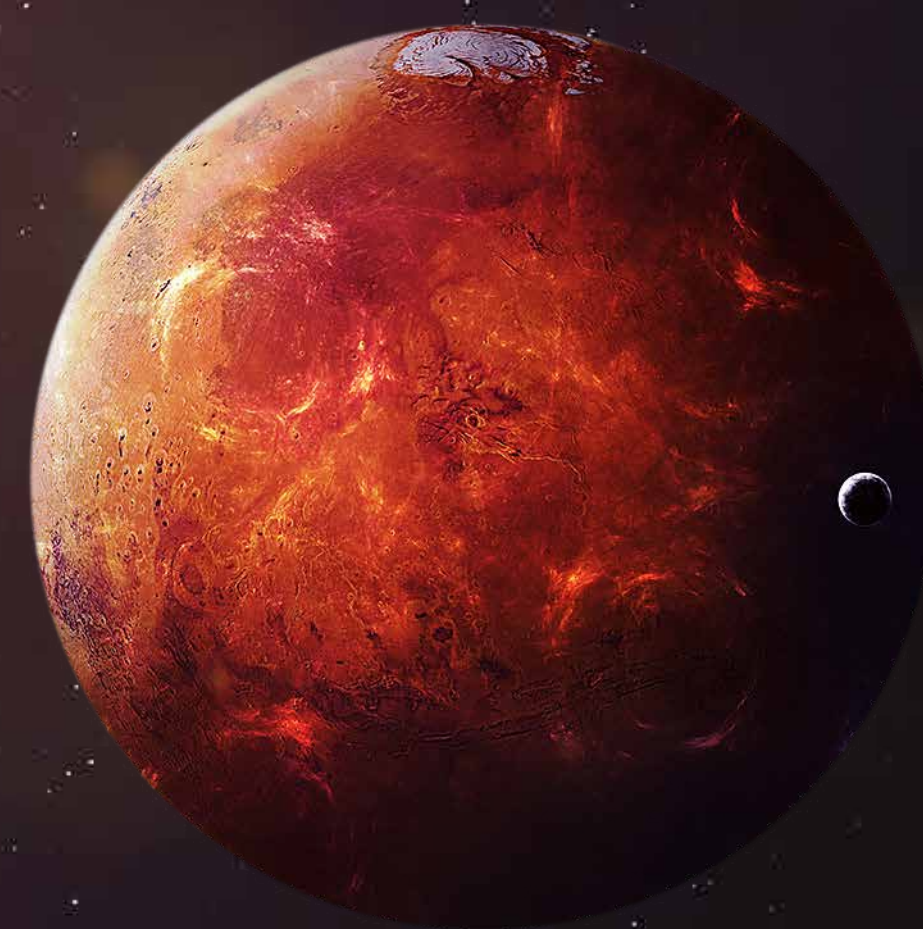
ASTEROIDS

Many countries and private companies are researching ways to capture asteroids and bring them into planetary orbit, in order to mine them for valuable resources.

PRIVATE SPACE INDUSTRY

Many private companies are developing technology for space programs, which include shuttling services, luxury services, mining operations, and other services or programs.

MARS



WATER ON MARS

NASA has discovered liquid and frozen water on Mars, which could make long-term settlements and operations more viable.

SELF-SUSTAINING ENVIRONMENTS

The continuation of a Mars mission would require the development of self-sustaining living environments that could support human life indefinitely.

FARMING

A mission to Mars would require a renewable source of food, so the United States will need to develop new farming methods for surviving in environments where growing crops currently is not possible.

MOON



HELIUM-3

The Moon is believed to have a greater reserve of helium-3 than found on Earth. China has proposed mining the element for future use in fusion energy reactors.

MINING

Operations to mine the Moon or asteroids would require the development of new technologies that could revolutionize mining industries on Earth.