

The Power of Geography

Reading Guide for Chapter 10, Space

“Space has become a political battlefield.”

–Tim Marshall

2020 **The Artemis Accords** were signed, governing the exploration of the Moon and extraction of its resources. Neither China nor Russia have signed on. (US Congress has banned NASA from working with China.)



The Final Frontier Soon May No Longer Belong to All of Us

July 28, 2022



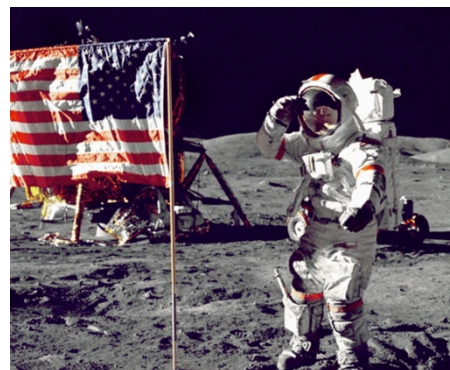
“There’s always been a military dimension to the space race,” going back to the days of **Wernher von Braun**, the German rocket scientist in the 1930s.

Russian **Konstantin Tsiolkovsky**, “Father of Space Travel” over 100 years ago.

The **Cold War** had a Space Race element to it.

1957 Soviets launched the **Sputnik** satellite into space... **Yuri Gagarin** was the first man in space in 1961.

1961 John F. Kennedy declared that the US should put a man on the moon by the end of the 1960s. 1968, photograph *Earthrise* taken.



July 20, 1969, **Neil Armstrong** walks on the Moon.

The **Space Race** between the USA & the USSR continued, with occasional cooperation like the International Space Station, launched in 1998. Russia’s cooperation ended in 2023 due to tensions over their invasion of Ukraine.

The benefits of rocket science for humanity.

Private companies are getting into the space race business. Elon Musk's Space X and Jeff Bezos' Blue Origin. "We must go to space to tap its unlimited resources and energy." -- Jeff Bezos

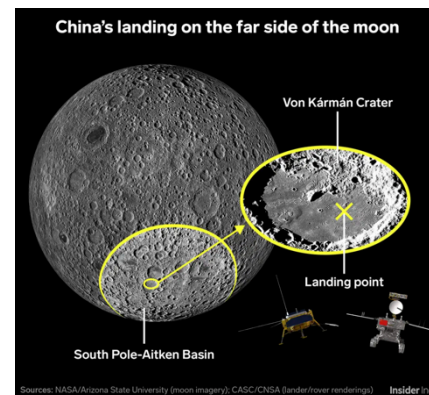
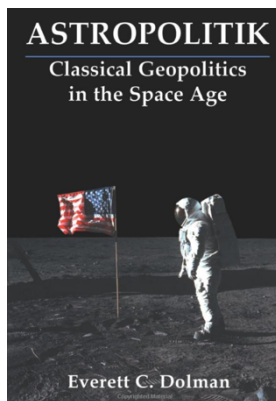


There are many legal, political, and military difficulties space exploration is presenting. The outdated Outer space Treaty of 1967 is not sufficient. Conflicting definitions of where space begins...

United Nations Office for Outer Space Affairs...the Committee on the Peaceful Uses of Outer Space (COPUOS)... The 1979 Moon Treaty. None is sufficient for contemporary times....**Realpolitik** for space – "astropolitics."

Astropolitical theorist **Everett Dolman** built on the geopolitical theorists Halford Mackinder & Alfred Mahan....Military Astro-strategists divide space into four parts: **Terra, Earth Space, Lunar Space, & Solar Space.**

"Who controls low Earth orbit controls near-Earth space. Who controls near-Earth space dominates Terra. Who dominates Terra determines the destiny of humankind." –Everett Dolman



Commercial considerations as well...meteorites for mining purposes.

"Without binding treaties limiting the militarization of space, low Earth orbit is a probable battlefield for military weapons aimed firstly at rivals within the belt, then below it."

Russia, China, & the USA include space in their military plans. USA created the **Space Force** in 2019.

Back in the 1980s Ronald Reagan proposed the Strategic Defense Initiative ("Star Wars").... Hypersonic missiles can fly at 20x the speed of sound, do not fly in an arc and can change direction and altitude....Nations can now "stalk" other nations' satellites....Russia can launch mini-satellites from within satellites – "Russian Dolls."

All countries rely on satellites for far more than TV and phone calls. They use them for intelligence and surveillance. Attacks on other nations' satellites is a new field of military strategy. "**Satellite Killers**" are a real risk.

The USA is developing a **“Space Fence”** to track space junk.

The imagined future of space competition: mining meteorites for rare-earth metals, Space travel to far-away stars, the search for life in the universe, searching for undiscovered asteroids that could collide and destroy life on Earth. (eg, the Tunguska meteor of 1908).