Advanced topics in the Solar System

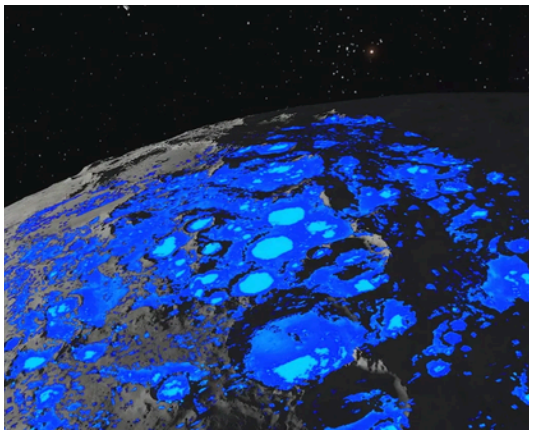
B2

The Moon & The Artemis Missions / *Měsíc a mise Artemis*

The Moon

The Moon is the only natural satellite of Earth and the only celestial body beyond Earth that humans have visited. It orbits around Earth at an average distance of 384,399 km. It lacks an atmosphere and liquid water, but recent data indicates the presence of water ice in permanently shadowed craters at the lunar south pole. This ice is a valuable resource that could be converted into drinking water, oxygen, and hydrogen fuel for deep-space missions.

The footprints left by the Apollo astronauts in the 1960s and 70s are still there today and could remain undisturbed for millions of years.



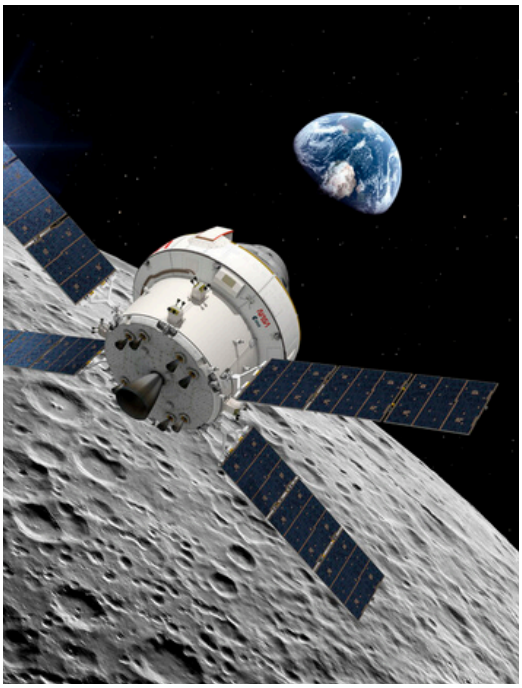
Water on the Moon
Source: ESA via MIT Technology

celestial [səˈles.tʃəl] - nebeské
resource [rɪˈzɔːs] - zdroj, prostředek

Artemis Missions: Returning to Stay

The Artemis program, led by NASA with international partners like ESA, aims to land the first woman and the first person of color on the Moon. Unlike the Apollo missions, by 2028, the program aims not only to land humans on the Moon again, but eventually create a lunar base and set the groundwork for a future endeavour to Mars.

The missions rely on the Space Launch System (SLS) rocket and the Orion spacecraft. The Artemis I mission was an unmanned flyby around the Moon, while the Artemis II, launched on 1st April 2026, is a manned mission with the same aim. It will carry a crew of four astronauts around the Moon to test life-support systems in deep space, as developed by the European Space Agency. It is the first crewed mission beyond low Earth orbit since Apollo 17 in 1972.



groundwork [ˈgraʊnd.wɜːk] – příprava, položení základů
endeavour [ɪnˈdev.ər] – úsilí, snaha, ambiciózní podnik
unmanned [ʌnˈmænd] – nepilotovaný, bez posádky (antonymous to crewed)

Write down into your notebook and discuss in class

Do you think crewed missions are more meaningful than unmanned missions with robots, like to Mars?

What were the consequences of Apollo missions on the technology back on Earth?