

# Moon rocket's first flight heralds exciting future

The UK Space Agency has welcomed the successful launch of NASA's Artemis I rocket to the Moon.

The Artemis 1 Space Launch System (SLS) took off from the Kennedy Space Center in Florida at 6.47am on 16 November, sending the uncrewed Orion capsule, powered by the European service module that includes Orion's engines, towards the Moon.

The event was postponed from the original planned date on 29 August and a second attempt on 3 September due to technical issues. The rocket was then rolled back from the launchpad to avoid Hurricane Ian.

The successful launch marks the beginning of the NASA-led Artemis programme, which the UK is part of through the European Space Agency (ESA) Human and Robotic Exploration Programme, and which will eventually see humans return to the Moon.

ESA is a key partner in the Artemis programme, delivering Orion's European Service Module, as well as elements of the Moon-orbiting Lunar Gateway.

Libby Jackson, Head of Space Exploration at the UK Space Agency, said:

The launch of the Artemis 1 mission is a hugely significant moment for the global space community, paving the way for humanity to return to the Moon in the coming years.

We are proud to be a part of ESA, which is contributing to this mission with the Orion service module, and we look forward to seeing direct UK involvement in the Lunar Gateway, currently in development through ESA's exploration programme.

It's also exciting to see this mission being tracked in the UK from Goonhilly Earth Station in Cornwall, marking a major step for our capacity to offer commercial lunar communications from the UK.

The Artemis programme marks the next chapter of human space exploration, and we look forward to continued involvement as it comes to life.

National Space Champion David Morris MP said:

Gene Cernan, who was the last man to walk on the Moon, told me that one day we will return, and I'm proud to say the UK will have a part to play in that return by contributing to the Artemis

programme nearly half a century after Gene left the surface of the Moon.

The UK will play a key role in developing the Lunar Gateway. Businesses all across the UK will be involved in building the service module and habitation module of a new space station to orbit the Moon, generating economic benefits and high-skilled jobs demonstrating the UK's prominence and prestige in the international space programme.

NASA's Artemis programme is currently on schedule to land the first woman and the next man on the Moon by 2025 and international partners will collaborate to achieve a sustainable presence on the lunar surface as an envisaged steppingstone to the first human mission to Mars.

During the Artemis 1 test flight, experts at Goonhilly Earth Station in Cornwall will provide operational support, helping to track the spacecraft and up to six of its 10 satellite payloads once in orbit.

Matt Cosby, Chief Engineering Officer at Goonhilly Earth Station, said:

We look forward to contributing to this iconic mission from here in the UK.

Goonhilly played a role in distributing the Apollo Moon landing footage back in 1969; we're now taking one step further and contributing to humanity's return to the Moon.

Supporting Artemis is a fantastic way to further demonstrate our capabilities as we continue to expand our deep space commercial services.

The Artemis 1 mission will test all SLS systems in preparation for the crewed Artemis 2 mission to the Moon. It will demonstrate Orion's heatshield in lunar entry conditions, operate systems in the flight environment, and retrieve spacecraft, among other objectives.

The mission is expected to last 25 days, including outbound transit, the journey around the Moon and deployment of satellites, followed by a return transit before splashdown in the Pacific Ocean in December.

NASA plans to send the first crewed Artemis mission into space in 2024 and expects the first Artemis astronauts to land on the lunar surface in 2025.

Named after the Greek goddess of the Moon and sister to the god Apollo, namesake of NASA's first Moon missions, the Artemis programme will see the construction of the Lunar Gateway: a new space station where astronauts will be able to live and work.

The build of the Lunar Gateway will include crucial contributions from Thales Alenia Space UK (TAS-UK) and Imperial College London, provided with backing from the UK Space Agency.

The team at Imperial College London is building the magnetometer sensor that will monitor cosmic and solar rays as part of ESA's European radiation sensors array that will assist experiments on-board the Gateway to assess how deep space conditions could affect astronauts and equipment.

Meanwhile, TAS-UK is developing the ESPRIT refuelling module, which will enable the spacecraft to safely refuel while in orbit.