BBC

JAMES WEBB WHAT IT'S DISCOVERED SO FAR (HINT: THERE'S A LOT)

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SPACE

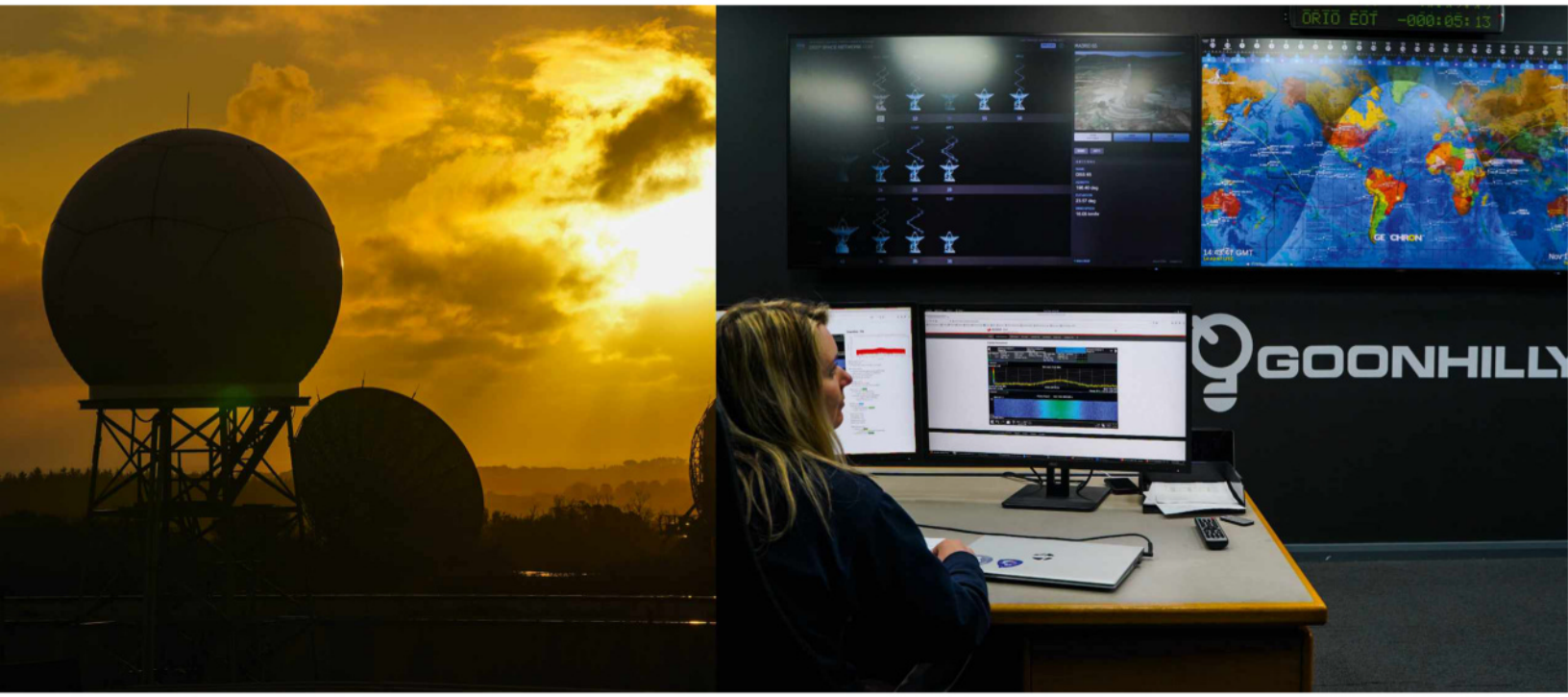
THE UK'S GOONHILLY EARTH STATION HAS STARTED TRACKING THE PATH OF NASA'S ARTEMIS 1

The collaboration is the first of several missions ushering in an exciting new era for UK space science

ABOVE Artemis 1 blasts off from the Kennedy Space Center

NASA's Artemis 1 mission successfully got underway on 16 November, with the Space Launch System (SLS) rocket sending the uncrewed Orion capsule on its journey to the Moon. The mission is the first of a series that will culminate with the space agency aiming to put humanity back on the lunar surface for the first time in more than 50 years.

Shortly following the launch, the Goonhilly Earth Station based in Cornwall picked up radio signals being sent from the mission's Orion capsule as it detached from the SLS launch rocket to begin its mission in earnest. The huge radio communications facility is now tracking the trajectory of the spacecraft as it makes its 25-day journey to the Moon and beyond, and is feeding data directly to NASA scientists in the US.



During its mission, Orion will travel within 100km of the lunar surface before being flung out by gravitational effects into an orbit around 70,000km beyond the Moon. It will then loop back and return to Earth, before splashing down off the coast of Baja California. For the entirety of its 2,000,000km round trip, it will be under the watchful eye of Goonhilly.

The radio communications facility will also be tracking the progress of six of the 10 CubeSat miniature satellites launched by Orion.

"Witnessing the first launch of the Artemis 1 SLS rocket is a landmark moment for the global space community, as we prepare to return humans to the Moon," said Sue Horne, head of space exploration at the UK Space Agency (UKSA).

"The rocket will place the Orion spacecraft in orbit around the Moon, which we will be able to track in the UK from Goonhilly Earth Station in Cornwall. The Artemis programme marks the next chapter of human space exploration, and we look forward to continued involvement as it comes to life," she added.

If everything goes to plan, NASA aims to send a crewed mission around the Moon as part of Artemis 2 in early 2024. In 2026, it then plans for Artemis 3 to land astronauts on the lunar surface for the first time since 1972.

Looking even further ahead, plans to build the Lunar Gateway – a small space station in orbit around the Moon – are currently slated for 2027. Again, UK science is involved in this mission. Researchers from Imperial College London are building a sensor that will monitor cosmic and solar rays to investigate their effects on astronauts and equipment, while commercial enterprise Thales Alenia Space UK is developing the ESPRIT refuelling module, which will enable the spacecraft to safely refuel while in orbit.

"I've been in this sector for 12 years now and I've seen it grow significantly in that time," said Andrew Kuh, manager of exploration and technology at the UKSA.

"That's through diversifying into parts of space that we didn't do so much before, such as launch, but also through increased investment in areas like Earth observation and telecommunications, where there's this huge potential still for more growth.

"I think we have a really good story to tell about how space can play a role in improving our fortunes as a country."

ABOVE LEFT
The antennas at Goonhilly Earth Station in Cornwall

ABOVE RIGHT
Operators at Goonhilly track the Orion spacecraft

"We have a really good story to tell about how space can play a role in improving our fortunes as a country"

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