List of first UK space satellites, the firms behind them and what they're for

The UK's first ever satellite launch is due to take place from Cornwall in January.

A launch window opens from January 9 to allow for the horizontal space launch from Cornwall Spaceport.

Preparations are in their final stages for Virgin Orbit's rocket – Launcher One – to take off, carried on the wing of a modified Boeing 747 aircraft named Cosmic Girl.

Carried on the rocket will be small clusters of shoe-box sized satellites. The rocket will be released at around 35,000 feet for onward flight into space, carrying the satellites into Low Earth orbit.

In the cockpit will be Squadron Leader Mathew 'Stanny' Stannard, an RAF Test Pilot serving on industrial placement as one of Virgin Orbit's pilots.

It is a huge development for the UK and for Cornwall which has been building a space cluster of tech firms and organisations around this launch.

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It is expected to be the first of many.

Virgin Orbit says that the horizontal launch method allows it to conduct low cost missions quickly and efficiently by bypassing heavily trafficked established launch ranges.

Here we take a look at the pioneering firms that have

manufactured or developed technology for the first satellites to be launched into space from UK soil.

IOD-3 AMBER

Developed by UK firms Satellite Applications Catapult and Horizon Technologies and built by AAC Clyde Space in Glasgow.

The satellite is designed for communication missions and will be able to locate and track vessels worldwide by geolocating and demodulating RF signals in a system that can be used to fight piracy, illegal trans-shipments, illegal fishing, and refugee smuggling.

It can also be used for other purposes such as detecting and tracking a variety of RF emitters.

IOD-3 Amber is expected to be the first of more than 20 Amber satellites to provide space-based Maritime Domain Awareness (MDA) data to users.

Prometheus-2

Prometheus-2 was co-funded and designed with Airbus Defence and Space and assembled by In-Space Missions in Hampshire.

It is part of a collaboration between the UK's Defence Science and Technology Laboratory (Dstl) and international partners, including the US National Reconnaissance Office.

The two cubesats will support MOD science and technology activities, both in orbit and on the ground, through the development of ground systems focused at Dstl's site near Portsmouth.

The satellites are each the size of a cereal box and will provide a test platform for sophisticated imaging, and monitoring radio signals including GPS, supporting future space-based intelligence and surveillance.

After being released in Low Earth Orbit the satellites will deploy solar arrays to provide power for the mission, which is expected to last for up to three years.

CIRCE (Coordinated Ionospheric Reconstruction CubeSat Experiment)

CIRCE is part of a joint mission between the UK's Defence Science and Technology Laboratory (DSTL) and the U.S. Naval Research Laboratory (NRL).

The CIRCE satellites are the size of a shoebox and each have five sensors to monitor the Earth's ionosphere and particle radiation.

DOVER

DOVER Pathfinder satellite under construction with structure

and solar panels
(Image: Open Cosmos.)
Developed by RHEA Group in the UK, it is the company's first satellite in its 30-year history. The satellite is being co-funded through the European Space Agency's (ESA) Navigation Program (NAVISP).

The satellite has been built by Open Cosmos at the Harwell Space Cluster, Oxfordshire. The satellite will transmit a signal, specially designed by engineers at RHEA, to provide data from space that can be used to obtain a position or an accurate time.

ForgeStar-0

ForgeStar-0 is the first satellite designed and built in Wales created by Cardiff startup Space Forge.

Developed by Cardiff start-up Space Forge, the satellite is a fully returnable and reusable platform to enable in-space

manufacturing.

This launch will test the deployment of Space Forges' proprietary re-entry shield which, during future operational missions, will protect a satellite traveling through the heat of the atmospheric re-entry, targeting small landing zones off the coast of the UK and other countries.

The ForgeStar-0 is the world's first returnable and reusable satellite platform that can be deployed from conventional launchers to provide rapid, reliable and reusable in-space infrastructure.

AMAN

Oman's first orbital mission, it is a single earth observation satellite that aims to prove the future feasibility of a larger constellation.

The CubeSat is a result of international collaboration between the Sultanate of Oman, the USA, and Poland. The project comprises Omani technology innovator ETCO, Polish nanosatellite manufacturer SatRev, and cognitive technology solutions provider TUATARA.

The project is part of Oman Vision 2040, a national program aiming to foster economic competitiveness and social well-being.

Oman expects its space programme to enable scientific research and the capturing of high-resolution satellite images.

These will then be analysed using TUATARA's Computer Vision, Machine Learning, and AI solutions.

STORK-6

The next instalment of Polish Small Satellite manufacturer and operator SatRev's STORK constellation.

Virgin Orbit previously launched two satellites in this series on a previous launch.

It offers Earth observation services.

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