A SLING SHOT LAUNCH

Looking back through those archives again we can see that in October 2021 NASA conducted a test of a revolutionary way to launch satellites into space. As reported earlier that year, the massive device, taller than the Statue of Liberty, was already in place in the New Mexico desert and would be tried out by the space agency later that year. It consists of a 300ft wide steel vacuum chamber, turned on its side, with an exit pipe pointed at the sky. Inside, an object is attached to a carbon-fibre tether and spun in circles. Because it is being spun in a vacuum the object on the end of the tether can be accelerated to thousands of miles per hour, before being released through the pipe.

The 1,000-ton steel, electric-powered centrifuge was built and is operated by a private company, SpinLaunch, which has signed a test deal with Nasa under the Space Act. A 10ft-long Nasa test vehicle, shaped like a torpedo, will be catapulted skyward before deploying a parachute, landing, and then being recovered and analysed. Jonathan Yaney, founder of SpinLaunch said it was a "fundamentally new way to access space" and "we greatly appreciate NASA's continued interest and support."

The project represents the first serious alternative to rockets since the dawn of the space age. The aim is to dramatically cut the cost of launching satellites, while also helping the environment by avoiding using vast amounts of rocket fuel. That first test in October successfully propelled SpinLaunch's own 10ft-long test vehicle to an altitude of about 10,000 metres, higher than Mount Everest. Dozens more tests are planned and then a bigger version of the machine, which will be about the size of the Eiffel Tower, will be used to send satellites into orbit by 2025.

Payloads will be fitted with a small rocket engine which will ignite at high altitude to power the last bit of the journey to orbit. The system means over 70 per cent of the fuel and structures that make up a current rocket launch will be eliminated, with huge cost savings. The real advantage is that most of the energy needed doesn't have to be carried with you [as fuel].

It is estimated the slingshot will ultimately reduce the cost of launching a small satellite into orbit from about $7 million to $500,000. Eventually, it should be able to send payloads of about 440lbs into orbit for a fraction of what it costs other pioneers like SpaceX. For its recent suborbital test flight the slingshot was only powered up to 20 per cent of its capacity, meaning it can hurl payloads much higher. It will not be usable for astronauts as they would not survive the huge G-forces built up by the rotations of the slingshot.

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