

# 'Hot' race to design a self-propelled vehicle on the Moon for NASA

On April 3, the US Space Agency (NASA) announced that three companies, Intuitive Machines, Lunar Outpost and Venturi Astrolab, are racing to develop new generations of Lunar Terrain Vehicles (LTV) - autonomous vehicles. Artemis astronauts will fly around the moon's south pole in 2030.



The above companies are tasked with designing LTV models under contracts with a maximum total value of 4.6 billion USD. After rigorous selections, NASA will choose the most suitable company to be the LTV supply partner. The selected company will not only be responsible for building the rover on the Moon, but will also be responsible for helping bring the vehicle to the lunar south pole. This will also be America's first lunar rover since the Lunar Rover launched during the Apollo 15 mission in 1971.

To date, NASA has carried out one mission under the Artemis Program - Artemis 1, bringing the Orion spacecraft to lunar orbit (and back) by the end of 2022. According to the plan, the Artemis 2 mission will take 4 spacecraft. astronauts orbit the Moon in September 2025, while Artemis 3 will approach the lunar south pole a year later. In addition, NASA also wants to have an LTV on the Moon for the Artemis 5 crew to drive around the South Pole by 2030.

Among the above candidates, Intuitive Machines (based in Texas) made a big splash when their Odysseus spacecraft became the first US spacecraft to land on the Moon since the Apollo 17 mission (with driver) in 1972. The initial financial support for Intuitive Machines in this project was 30 million USD.

According to Intuitive Machines, this company will coordinate to develop the Reusable Crewed Autonomous Exploration Vehicle (RACER) with partners such as mobile equipment company AVL (Austria), aircraft manufacturer Boeing ( USA), tire manufacturer Michelin (France) and defense aerospace company Northrop Grumman (USA).

Meanwhile, Venturi Astrolab is researching and building a flexible logistics and exploration ship (FLEX) with partners Axiom Space and Odyssey Space (both from the US). The original design of this rover was "unveiled" by the company in 2022. Venturi Astrolab said: 'The FLEX rover is designed to carry 2 astronauts, supporting scientific exploration with the arm robots, transport goods and withstand extreme temperatures at the Moon's south pole'.

Regarding innovation, Lunar Outpost cooperates with Lockheed Martin, General Motors, Goodyear (both from the US) and MDA Space (Canada) to manufacture Lunar Dawn LTV. Mr. Justin Cyrus - CEO of Lunar Outpost - said: 'We are leveraging the strength of advanced technology and the automotive industry to deliver a capable off-road vehicle that allows us to live and working on the lunar surface'.

Lunar Outpost is also planning to send a small, unmanned rover to the Moon later this year, with the goal of becoming the second private company to land on the Moon, after Intuitive Machines.

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