

ULA's Vulcan Rocket Faces New Booster Issue Before Launch

Description

Moments after lifting off from Florida's Space Coast early Thursday, United Launch Alliance's Vulcan rocket displayed a shower of sparks in its exhaust plume. This occurred shortly before the rocket twisted on its axis but subsequently stabilised and continued its ascent into orbit, carrying a set of US military satellites.

This incident may seem familiar to followers of rocket launches. Sixteen months prior, another Vulcan rocket lost one of its booster nozzles just after launch from Cape Canaveral Space Force Station. Despite this malfunction, the rocket was able to recover and achieved its intended orbit.

The specifics surrounding Thursday's booster issue are still unclear, though an investigation is underway, according to ULA, a partnership between Boeing and Lockheed Martin. The circumstances echo the earlier booster malfunction from October 2024. Close-up footage from the launch revealed a fiery plume near the throat of one of the rocket's four solid-fuel boosters. The throat is the section where the motor's propellant casing connects to the exhaust nozzle, channeling super-hot gas to produce thrust.

The anomalous plume first appeared less than 30 seconds into the flight, which commenced at 4:22 am EST (09:22 UTC) on Thursday. A cloud of sparks and debris followed shortly, accompanied by a sudden rolling motion along the Vulcan's long axis. The rocket's four strap-on boosters eventually burned out and were cast off, landing in the Atlantic Ocean. ULA reported that the remainder of the mission proceeded without further issues.

Gary Wentz, ULA's vice president of Atlas and Vulcan programmes, stated, "During the early flight phase, a significant performance anomaly was detected in one of the four solid rocket motors. However, the Vulcan booster and Centaur performed as expected and successfully delivered the spacecraft to geosynchronous orbit." ULA is currently analysing technical data and imagery, establishing a recovery team to collect debris, and will conduct a thorough investigation to determine the root cause before the next Vulcan mission.

Vocabulary List:

1. **Anomaly** /ə'noməli/ (noun): Something that deviates from what is standard normal or expected.
2. **Throat** /θroʊt/ (noun): The part of a rocket motor where the propellant flows to the nozzle.
3. **Plume** /plu:m/ (noun): A visible or noticeable quantity of smoke vapor or gas.
4. **Ascent** /ə'sent/ (noun): The act of rising or moving upward especially in a rocket launch.
5. **Investigate** /ɪn'vestɪ,gɪt/ (verb): To carry out a systematic or formal inquiry to discover and examine the facts.
6. **Debris** /də'bri:/ (noun): Scattered pieces of waste or remains resulting from an event.

CATEGORY

1. Sci/Tech - LEVEL6



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