ULA chief on the Vulcan rocket: “The path to flight one is clear”

Enlarge / United Launch Alliance’s Vulcan Certification-1 first stage sits atop Space Launch Complex-41 at Cape Canaveral Space Force Station, Florida for qualification testing.

reader comments

22 with

United Launch Alliance is closing in on the debut flight of the Vulcan rocket, and it remains on track to fly the vehicle for the first time on December 24.

During a media roundtable on Wednesday afternoon, the chief executive of United Launch Alliance, Tory Bruno, said, “The path to flight one is clear” for Vulcan. The last major piece of hardware for the rocket, the Centaur V upper stage, arrived at Cape Canaveral, Florida, on Monday. All of the qualification testing necessary for the first flight, including for the upper stage, is complete.

In the coming days, Bruno said the Centaur upper stage would be integrated with the Vulcan first stage. Then, the combined vehicle will be rolled to the launch site for a fueling test known as a wet dress rehearsal in December. However, the rocket’s main engines, BE-4s provided by Blue Origin, will not be fired. That’s because the first stage already completed this hot fire test successfully in June.

Bruno said United Launch Alliance, or ULA, has some margin in

its schedule as it works toward a launch at 1:49 am ET on Christmas Eve. If the weather is poor, the company also has launch opportunities on December 25 and 26 before the closure of the launch window this year. The “Certification 1” mission would then have another launch opportunity during the first half of January.

As its primary payload, the Certification 1 mission will carry a lunar lander built by Astrobotic, which will attempt to make a soft touchdown on the Moon early next year.

Waiting for Vulcan

Vulcan has been a long time coming. ULA has been developing the rocket for more than a decade as it sought to build a heavy lift rocket to replace its fleet of Atlas and Delta rockets. The change was driven by two major needs. One, the company needed a rocket more cost-competitive with SpaceX’s Falcon 9 and Falcon Heavy boosters. And two, the US Congress mandated that ULA end its reliance on the Russia-made engines that power the Atlas V rocket.

Advertisement
The big rocket was originally due to launch in 2020 but has slipped due to several issues, including the prolonged development process of the BE-4 rocket engine as well as a serious accident with the Centaur V upper stage in March this year.

As the delays have mounted, ULA has faced increasing pressure from the US Space Force to begin flying Vulcan, as it is slated to fly about two dozen national security missions in the next five years. Before it can do that, however, Vulcan must complete two certification flights and provide data to the military. The first of these is the Astrobotic flight, and the second mission will launch Sierra Space’s Dream Chaser spacecraft. During Wednesday’s teleconference, Bruno declined to set a specific target for that flight, mentioning only that

it probably will take place during the first half of next year.

Going for lots of missions

Bruno said ULA has sold 70 Vulcan launches, a tally that consists of about one-half military missions and one-half commercial flights. The primary customer for the commercial launches is Amazon, which is eager to begin putting its Project Kuiper broadband Internet satellites into low-Earth orbit.

As a result, ULA is seeking to scale up production of the Vulcan rocket to reach a cadence of two launches a month by the end of 2025. That seems rather ambitious and might be asking a lot of suppliers, including engine manufacturer Blue Origin. Bruno, however, said the management challenges of that scaling are being worked on.

“We are expecting Blue to keep up with us, and we’re working very, very hard to do that,” he said. “So far, so good.”

https://arstechnica.com/?p=1984231