COLORADO SPRINGS, Colo. – If schedules hold, the Space Coast will live up to its name over the next two years as a half-dozen new rockets target launches from sites peppered across the Eastern Range.

Company, government and military officials here at the 35th Space Symposium, an annual space conference, have reaffirmed their plans to launch rockets ranging from more traditional heavy-lift behemoths to smaller vehicles that take advantage of new manufacturing technologies.

Even if some of these schedules slip, at least one thing is apparent to several spaceflight experts here: The Eastern Range is seeing an unprecedented growth in commercial space companies and efforts.

Space Launch System: 2020

NASA's long-awaited SLS, a multibillion-dollar rocket announced in 2011, is slated to become the most powerful launch vehicle in history if it can meet a stringent late 2020 deadline.

The 322-foot-tall rocket is expected to launch on its first flight – Exploration Mission 1 – from Kennedy Space Center with an uncrewed Orion capsule for a mission around the moon, which fits in with the agency's wider goal of putting humans on the surface by 2024. But the SLS program has been plagued by delays in recent years, pushing back its debut several times to no earlier than late 2020. Boeing is the prime contractor.
"Number one, we need to get EM-1 off the ground in 2020," NASA Administrator Bridenstine said at the symposium this week when discussing architecture of the 2024 mission. "We need to make that happen in 2020."

If it stays on track, SLS will be stacked in the famous Vehicle Assembly Building before rollout on a mobile launch platform to KSC's pad 39B.

**Terran 1: 2020**

![Artist rendering of Relativity's Terran 1 rocket blasting off from Cape Canaveral Air Force Station's Launch Complex 16. (Photo: Relativity Space)]


The company 3D prints rocket components and engines with its metal printer — the world's largest — in Los Angeles. From there, it will transport them to the Cape for launch, CEO Tim Ellis told FLORIDA TODAY at Space Symposium.

"We actually really have two products: One is the rocket, and one is the factory," Ellis said. "We are 3D printing 95 percent of the rocket by mass. Everyone else to the best of our estimates are doing less than one percent."

3D printing rockets can offer several advantages, Ellis said: Less tooling, more automation, faster turnaround times and lower cost, to name a few. He said his company can produce a fully 3D printed rocket in 20 days — that's compared to traditional manufacturing, which can take up to 18 months.

The 100-foot-tall Terran 1 is expected to launch late in the year with smaller payloads.

**New Glenn: 2021**
Blue Origin's entrance into the heavy-lift market with New Glenn, a large vehicle that clocks in with 270 and 330-foot variants built at KSC's Exploration Park, is expected no earlier than 2021.

The reusable rocket, which will land vertically like SpaceX's Falcon 9, has already secured launch contracts and will launch from Cape Canaveral's Launch Complex 36, which is currently being refurbished.

The rocket will be powered by seven BE-4 engines, which have also been contracted by United Launch Alliance for their upcoming Vulcan Centaur rocket.

**Vulcan Centaur: 2021**

More capable and expected to be cheaper than ULA's current offerings, [Vulcan](https://www.spaceflightnow.com/launchvehicle/2019/03/04/first-vulcan-flight-cadastro-2/) is also on track for its first flight in 2021, CEO Tory Bruno said at Space Symposium this week.

Most of Vulcan's individual components, such as its solid rocket motors, are interchangeable with existing Atlas V hardware. Bruno expects that components like the motors and the payload fairing will fly first on Atlas before Vulcan eventually launches with all the parts. The cost savings and efficiency improvements are expected to come gradually as those are phased in.

"When we get to Vulcan's first flight in 2021, very little of that rocket will not have flown before," Bruno said. "We are feathering it in as we come through on Atlas."
Omega: 2021

Northrop Grumman's solid fuel-powered Omega rocket is a medium- to heavy-lift vehicle primarily designed for national security missions like military communications satellites. The company entered into an agreement with NASA to use the Vehicle Assembly Building for stacking and pad 39B for launch, meaning it will share the pad with SLS.

Company officials here this week told FLORIDA TODAY that they expect the first demonstration flight in 2021 with a yet-to-be-chosen payload.

The Air Force this year proclaimed its confidence in the 200-foot-tall rocket with a nearly $800 million contract to continue development.

Alpha: 2021

Firefly Aerospace, which in February announced it would take over the 1950s-era Launch Complex 20 at Cape Canaveral, is expected to launch its first 95-foot rocket in 2021.

The rocket is designed to take smaller payloads to orbit, but the Texas-headquartered aerospace company also said the rockets would be built in a 150,000-square-foot hangar at the launch site, which is another prestigious win for Florida.
Space Coast is getting busy: 6 new rockets coming to Cape Canaveral, KSC

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