Rocket Report: NASA’s stunning Falcon 9 bargain, Ariane 6 delayed

Enlarge / The Electron launch vehicle is ready to soar.

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Welcome to Edition 2.45 of the Rocket Report! We’re looking ahead to a monumental week of rocket launches with the first LauncherOne mission potentially taking flight on Sunday and the possible launch of Crew Dragon next Wednesday.

As always, we welcome reader submissions, and if you don’t want to miss an issue, please subscribe using the box below (the form will not appear on AMP-enabled versions of the site). Each report will include information on small-, medium-, and heavy-lift rockets as well as a quick look ahead at the next three launches on the calendar.

Virgin Orbit announces first launch attempt. On Wednesday, the company that has been developing LauncherOne for most of the last decade said it is ready to make a launch attempt. The rocket, which is dropped from a modified 747 aircraft, will not carry a customer’s payload. The mission, which is being classified as a “launch demo,” is set to take place between

10am and 2pm PT (17:00-21:00 UTC) on Sunday.

Now that's setting expectations … "Our goal is to safely learn as much as possible and prove out the LauncherOne system we've worked so hard to design, build, test and operate," the company said. "We'll continue the mission for as long as we can. The longer LauncherOne flies, the more data we'll be able to collect. Should we defy the historical odds and become one of those exceedingly rare teams to complete a mission on first attempt, we will deploy a test payload into an orbit, take our data, and then quickly de-orbit so as not to clutter the heavens." (submitted by Ken the Bin, JohnCarter17, and platykurtic)

Relativity nabs SpaceX launch and production VP. Relativity Space, a California-based company pushing hard toward the inaugural flight of its Terran 1 rocket by the end of 2021, has hired a senior launch official from SpaceX. Zach Dunn, formerly senior vice president of production and launch at SpaceX, will become vice president of factory development at Relativity, Ars reports.

Factory of the future … The well-capitalized startup recently announced plans to build a large 3D-printing factory in Long Beach, California. Dunn's first job will be to oversee the development of this facility, said Tim Ellis, co-founder of Relativity. "We really are looking to develop the factory of the future, as its own product," Ellis said. Dunn has a storied history at SpaceX, playing a key role in the development of the Falcon 1 and Falcon 9 rockets.

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SpaceX rideshare drives launch prices down. The Falcon 9 rideshare program the company started in August is putting

downward pressure on the cost of launching small satellites, SpaceNews reports. “SpaceX is offering pricing that previously wasn’t really seen,” said Mike Safyan, vice president of launch at Planet, an Earth-imaging company with more than 150 small satellites in orbit. Planet announced last week that it will launch six SkySat satellites as rideshare payloads on future Starlink missions.

A hyper-competitive program … SpaceX advertises a base price of $1 million for launching up to 200 kilograms and $5,000 extra per kilogram. The rideshare program is “incredibly competitive,” Safyan told SpaceNews. He called it “one of the more significant programs for the smallsat industry especially because of the pricing, the reliability and the number of orbits.” The business case for smallsat launchers already seemed pretty difficult to close. This doesn’t help. (submitted by Ken the Bin, JohnCarter17, and platykurtic)

Momentus signs additional contracts. Speaking of making life difficult for smallsat launch providers, this week Momentus Space announced contracts with video-streaming company Sen, satellite manufacturer Alba Orbital, and Polish nanosatellite startup SatRevolution. Momentus is developing vehicles to provide in-space propulsion for small satellites, SpaceNews reports.

A ride after your ride … One of the key criticisms of rideshare for small satellites is that launching a bundle of different satellites does not allow customers to enter desired orbits. However, a service like Momentus can take a small satellite deployed on a rideshare launch and move it where a company wants it to go. It’s no surprise that several of Momentus’ customers plan to launch on future Falcon 9 rideshare missions. (submitted by JohnCarter17).

Vega C launch debut likely delayed until 2021. Italian rocket builder Avio will keep a team of launch personnel in French Guiana from May through August in the hopes of completing

three Vega launches this year, notwithstanding coronavirus-related slowdowns, SpaceNews reports. Work continues on the upgraded Vega C, but it probably will not fly before next year, Avio CEO Giulio Ranzo said.

Workers back to French Guiana launch site … Vega is scheduled for a return-to-flight mission in mid-June that will be the rocket's first launch in 11 months. The rocket will carry 52 small satellites to low Earth orbit in a dedicated rideshare mission. After a nearly two-month pandemic shutdown, Avio sent a team of more than 60 people to the Guiana Space Center on May 11 to begin work. The team is subject to a 14-day quarantine. (submitted by JohnCarter17, platykurtic, and Ken the Bin)

Skyrora completes static-fire test of its rocket. During the ground test at a mobile launch complex at Kildermorie Estate in North Scotland earlier this month, Skyrora's launch vehicle Skylark L performed all actions of a launch while being held down, the company said. "This is the first time a launch vehicle of this magnitude has been tested in the UK for many years," said Jack-James Marlow, who led the test. "The vehicle is now ready for flight and we are one step closer to putting the UK back into space."

Aiming for an early 2021 launch … Skylark L is a bi-liquid-propellent, suborbital launch vehicle. Building up to the static-fire test, the rocket engine itself had gone through three hot-fire tests before integration into the vehicle. The company plans to use its own Ecosene fuel, an equivalent kerosene fuel made from un-recyclable plastic waste. Skyrora intends to start launching the Skylark L next spring and move to orbital flights by 2023. (submitted by Ken the Bin)

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