Rocket Report: Musk updates Super Heavy plan, China to launch spaceplane?

Enlarge / Sound-activated remote camera view as the 12th Starlink mission begins on Thursday, September 3.

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Welcome to Edition 3.14 of the Rocket Report! So basically, it’s Pi week for us. Also, you may realize we did not put out a Rocket Report last week—this is because the threat of Hurricane Laura provided an unexpected but significant distraction to the author. But now we’re back with a larger edition than ever.

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.

Rocket Lab successfully returns to flight. Flying for the first time since a failure two months ago, Rocket Lab’s Electron rocket delivered Capella Space’s first commercial

radar remote-sensing satellite to orbit Sunday after lifting off from New Zealand, Spaceflight Now reports. Rocket Lab says it has monthly launches scheduled for the rest of 2020, including the company's first flight from a new pad at Wallops Island, Virginia.

Building a better connector … Investigators traced the cause of the July 4 failure to a single faulty electrical connector on the second stage, which detached in flight and led to a premature engine shutdown. Rocket Lab said it has implemented improved testing to better screen for bad connectors, and the success of Electron's return-to-flight mission appears to have supported that idea. (submitted by Ken the Bin and JohnCarter17)

After 14 months, Vega returns to flight, too. On September 2 at 10:51pm local time in Kourou, French Guiana, Europe's light-lift Vega launcher performed its 15th successful mission, marking its return to flight. The ride-share mission carried 53 satellites into orbit for 21 customers, Arianespace said.

Back to business … The return-to-flight mission following a rocket failure in July 2019 was originally scheduled for March, before the COVID-19 pandemic closed the European spaceport. After the spaceport reopened in June, unfavorable winds precluded a launch attempt until later in the summer. With this mission complete, Arianespace hopes to market the Vega as an affordable ride-share vehicle for institutional and commercial customers. (submitted by platykuritc and Ken the Bin)

The Rocket Report: An Ars newsletter

The easiest way to keep up with Eric Berger's space reporting is to sign up for his newsletter, we'll collect his stories in your inbox.

PLD Space tests its rocket engine. Spanish launch startup PLD

Space has completed critical testing of the company's Teprel-B rocket engine, SpaceNews reports. The engine is expected to power the single-stage suborbital Miura 1 launch vehicle. Miura 1 is designed to launch 100kg of payload to an altitude of 150km, providing as much as three minutes of microgravity.

A step closer to qualifying the engine … PLD Space said it had successfully completed a series of thrust vector control tests on the kerosene-fueled Teprel-B rocket engine. The completion of the Teprel-B thrust vector control testing follows a successful "burst test" in March of the Miura 1 composite overwrapped pressure vessel, which is used to pressurize the rocket's propulsion stage during flight. (submitted by JohnCarter17, platykurtic and Ken the Bin)

Rocket Lab gains FAA launch license for Wallops. Rocket Lab said this week it has gained a key clearance from the US Federal Aviation Administration for the Virginia spaceport. With its "Launch Operator License" for the LC-2 pad at Wallops, the company can conduct multiple launches from the location without having to petition the agency for a mission-specific license for each individual flight, TechCrunch reports.

Launching later this year? … Rocket Lab held its official opening ceremony for the Virginia-based LC-2 at the end of last year, but COVID-19 and its related disruptions were probably what delayed the planned debut activity at the site. The company still has yet to set a launch date for the first mission from its second overall launch pad. (submitted by danneely and Ken the Bin)

Scottish launch site takes another step. After receiving planning approval from the Highland Council, with up to 12 launches a year permitted, a proposed vertical-launch spaceport in northern Scotland is taking its next regulatory step. Highlands and Islands Enterprise said it is applying to the Scottish Land Court for consent to build and operate the

facility.

Crofting means small-scale farming … Scottish Land Court consent is required because the project would be developed on crofting land, which is currently classed as common grazing. Any crofter with livestock on the common grazing would be asked to move their animals for periods around launch days. Construction is scheduled to begin next year, with a view to first launch potentially taking place before the end of 2022. (submitted by Ken the Bin)

SpaceX launches its 100th rocket. Weather conditions were poor throughout the afternoon of Sunday, August 30, at Cape Canaveral Air Force Station. But they cleared up just long enough for SpaceX to launch the SAOCOM-1B mission. This was a historic mission for two reasons, Ars reports, as SpaceX launched a rocket for the 100th time and flew a rare polar-corridor mission from Florida for Argentina's space agency.

Three different rockets … The tally of missions includes five Falcon 1 launches, three Falcon Heavy missions, and 92 Falcon 9 launches. Sunday's mission also represented the first time a rocket has launched from Florida—which is optimized for equatorial launches—into a polar orbit in 50 years. It was made possible due to a modernized flight-termination system that protected the Florida coast. On Thursday, the company flew its 101st mission.

Sea Launch spaceport will require $470 million to restore. The floating spaceport, currently located in a shipyard near Vladivostok, Russia, will require an investment of approximately $470 million to prepare it for new launches. This estimate came from Russian Deputy Prime Minister Yuri Borisov, the TASS news agency reports.

Sitting fallow for five years … The last launch from the sea-based platform took place in May 2015. “It is a unique structure unparalleled in the world,” Borisov said. “Some have plans for building something similar. It would be very silly of us, if we decided against restoring the Sea Launch and using its services. Technically all this is possible.” We’ll believe this when the funding is allocated and repairs begin. (submitted by JohnCarter17 and Ken the Bin)

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