Rocket Report: Another Chinese launch failure, Minotaur IV soars



Enlarge / Northrop Grumman successfully launched its Minotaur IV Rocket into orbit on Wednesday morning.

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Welcome to Edition 3.08 of the Rocket Report! We are now approaching the middle of the 2020 Mars launch window, and it appears as though we will see the UAE, China, and United States all launch missions to the Red Planet during the last 10 days of the month. Exciting times ahead!

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.



Chinese Kuaizhou-11 launch ends in failure. The launch of a new Chinese Kuaizhou-11 commercial solid rocket ended in failure last Friday, resulting in the loss of two satellites, SpaceNews reports. Terse reports from Chinese media state that the specific cause of the failure is "under further analysis and investigation."

China's third launch failure of 2020 … The Kuaizhou-11 is a larger version of the Kuaizhou-1A solid rocket, operated by Expace, a commercial spin-off from the China Aerospace Science and Industry Corp., a state-owned missile maker. The rocket has a diameter of 2.2 meters and a mass at liftoff of 78 tons. It is capable of delivering 1,000 kilograms to a 700km Sun-synchronous orbit. (submitted by Ken the Bin, JohnCarter17, and platykurtic)

Small-launch contracts diverted to small-business loans. The $116 million that the US Department of Defense set aside for small-launch contracts under the Defense Production Act have been redirected to other priorities, SpaceNews reports. The Pentagon had approved funding the small-launch contracts but, at the last minute, decided to shift the money to small-business loan programs that were considered a more urgent priority. It is unlikely that those contracts will be awarded any time soon, the US Air Force's top procurement official Will Roper said.

DoD says of the funds: You can't aevum … About a month ago,

the military announced it intended to award contracts to six small-launch providers financially impacted by the coronavirus pandemic. On July 1 DoD withdrew the contracts that would have been awarded to Aevum, Astra, X-Bow, Rocket Lab, Space Vector, and VOX Space to launch two rideshare missions over the next 24 months. Awarding the launch contracts now will require additional funding from Congress. (submitted by 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.

Next frontier for small rockets: Deep space? In a feature, Ars explores the potential for small satellites (and the new low-cost rockets that launch them) to transform planetary science. Instead of spending a decade or longer planning and developing a mission before spending hundreds of millions (to billions!) of dollars bringing it off, perhaps we can fly a mission within a couple of years for a few tens of millions of dollars.

The Moon, Mars, and beyond … In recent years, a new generation of companies is developing new rockets for small satellites that cost roughly $10 million for a launch. Already, Rocket Lab has announced a lunar program for its small Electron rocket. "I think this is a huge, disruptive program for the scientific community," Rocket Lab's chief said. And Virgin Orbit has teamed up with a group of Polish universities to launch up to three missions to Mars with its LauncherOne vehicle.

Minotaur IV rocket launches NRO mission. A Northrop Grumman Minotaur IV solid-propellant rocket launched the NROL-129 mission for the National Reconnaissance Office on July 15 from NASA's Wallops Flight Facility in Virginia, SpaceNews reports. The classified NROL-129 mission carried four remote-sensing payloads.

Putting old missiles to good use … This was the Minotaur IV's first flight from the Mid-Atlantic Regional Spaceport at NASA's Wallops Island Facility. It was the NRO's first launch on a Minotaur IV, a four-stage vehicle made with three government-furnished solid-rocket motors from decommissioned Peacekeeper intercontinental ballistic missiles. (submitted by JohnCarter17 and Ken the Bin)



Korean satellite launch postponed. The planned launch of a SpaceX Falcon 9 rocket Tuesday from Cape Canaveral of a South Korean military communications satellite has been delayed in order to address an issue on the launcher's second stage and potentially replace the hardware if necessary, Spaceflight Now reports.

Being extra paranoid … This is the second SpaceX mission to be postponed indefinitely in recent days as the company tries to cut turnaround times for reused rockets and produce new upper stages at a rapid rate to meet a fast-paced launch schedule in the coming weeks. "We're being extra paranoid," tweeted Elon Musk, SpaceX's founder and CEO. "Maximizing probability of successful launch is paramount." Launch is now set for no earlier than July 19. (submitted by JohnCarter17)

Spaceflight to debut Sherpa-FX on Falcon 9 mission. The Seattle-based rideshare-management company said this week it will be flying its next-generation orbital-transfer vehicle, Sherpa-FX, on a dedicated rideshare mission with SpaceX. This mission is scheduled to launch on a Falcon 9 no earlier than December 2020. This is another step toward big rockets offering customizable satellite delivery.

Last-mile delivery … "In-space transportation is essential to meeting our customer's specific needs to get their spacecraft delivered to orbit exactly when and where they want it," said

Grant Bonin, senior vice president of business development for Spaceflight Inc. “If you think of typical rideshare as sharing a seat on a train headed to a popular destination, our next-generation Sherpa program enables us to provide a more complete ‘door-to-door transportation service.'” (submitted by Ken the Bin)

Hope Mars probe launch delayed by weather. After two previous weather delays, a Mars orbiter financed by the United Arab Emirates will be launched between July 20 and 22, the Khaleej Times reports. The new launch time will be announced depending on the weather conditions.

Third time’s the charm? … A Japanese H-2A rocket was originally due to launch on July 15. But the “persistence of thunderstorms, cumulative clouds and unstable weather conditions in the coming days on Tanegashima Island” have now delayed the launch twice. The rocket and spacecraft are both said to be in good condition. (submitted by JohnCarter17)

Arianespace will phase out Ariane 5 in 2022. Program delays have forced EUMETSAT to reserve a pair of Ariane 6 rockets for two European weather satellites originally anticipated to launch on Ariane 5 rockets, SpaceNews reports. Only one of three planned satellites, MTG-I1, will be completed before Arianespace switches completely to Ariane 6 rockets.

Two more years of Ariane 5 … MTG-I1, an imaging satellite, will launch on an Ariane 5 rocket in 2022, the last year Ariane 5 will be available, said Paul Counet, EUMETSAT’s head of strategy. The sounding satellite MTG-S1, for which EUMETSAT had a firm Ariane 5 launch contract, is now scheduled to launch in 2023 on an Ariane 6, as well as another bird launching in 2025. (submitted by JohnCarter17)

Rocket for next crew mission arrives in Florida. The SpaceX Falcon 9 rocket that will launch NASA’s SpaceX Crew-1 mission for the agency’s Commercial Crew Program has arrived in

Florida, the space agency said. This mission will carry NASA astronauts Victor Glover, Michael Hopkins, Shannon Walker, and JAXA astronaut Soichi Noguchi to the International Space Station for a full-duration mission.

Taking flight in a couple of months … A launch date will be determined after the completion of SpaceX's crew-demonstration mission, which is likely to return to Earth in early August. This suggests the flight will take place no earlier than late September. The rocket will now undergo prelaunch processing in the company's facility on nearby Cape Canaveral Air Force Station. (submitted by Ken the Bin)



No big rockets in 2020, but *seven* are coming. 2020 was supposed to be the year of the big rocket. At one point, as many as four large, powerful boosters were slated to take flight this year. Alas, we now know for sure that none of them is going to make it this year, because Arianespace's Ariane 6, NASA's Space Launch System, Blue Origin's New Glenn, and United Launch Alliance's Vulcan Centaur will all slip to 2021 at the very least.

Seven deadly predictions … However, all of those rockets and three more—Japan's H3, Northrop Grumman's Omega booster, and SpaceX's Super Heavy first stage—are coming at some point in the next couple of years. In a new article, Ars makes wild guesses as to when each of these seven new rockets may ultimately make its debut. Spoiler alert: we think H3 probably will be first and New Glenn last.

SLS static-fire test may occur in October. NASA and Boeing say they are on track to perform a major static-fire test of the core stage of the Space Launch System in October, a key milestone ahead of a first launch in late 2021, SpaceNews reports. Crews working on testing the SLS core stage at the

Stennis Space Center have run into “no issues” so far during a series of tests collectively known as the Green Run, said John Shannon, Boeing vice president and program manager for the rocket.

Up to test number four … Three of eight Green Run tests have been completed. These include applying forces to the core stage to simulate launch conditions, powering on the stage’s avionics, and testing the systems that would shut down the stage if there’s a problem during testing. Shannon said work is underway on the fourth test: checking components of the rocket’s main propulsion system. If the test firing does occur in October, amidst the COVID-19 pandemic, that would be a positive step forward for the program. (submitted by Ken the Bin and JohnCarter17)

ESA confirms Ariane 6 delay to late 2021. Of the big four rockets that once had debuts set for this year, Ariane 6 was the last to announce a delay. “While we know that the maiden flight will not take place before the second semester of 2021, we cannot at this moment precisely quantify the delay, and we cannot provide an exact launch date,” Daniel Neuenschwander, ESA’s director of space transportation, said.

The pandemic played a big role … SpaceNews reports that pandemic-induced delays with Ariane 6’s launch pad construction, solid-rocket-booster testing, and productivity losses at Ariane 6 industrial sites had compromised the rocket’s original schedule. Neuenschwander also said problems with the cryogenic arms at the Ariane 6 launch pad in Kourou, French Guiana, were contributing to the delay. (submitted by Ken the Bin and JohnCarter17)

SLS rocket replaces Saturn V on Alabama tags. Alabama has traded the glory of a past Moon rocket for the promise of a new launch vehicle on the latest version of its space-exploration-themed specialty license plate, Collect Space reports. The redesigned “Alabama Space Tag” replaces the

depiction of the historic Saturn V booster with NASA's new Space Launch System rocket. The new plate marks the first time that the Saturn V has not appeared on an Alabama plate in 15 years.

Funds go to a good cause … The Alabama Department of Revenue began issuing the new Space Tag in May. Like the "Save the Saturn V" plate that it replaced, sales benefit the state's home for one of the three remaining Apollo-era rockets. Net proceeds will be distributed to the US Space and Rocket Center Foundation to be used toward the Davidson Saturn V Center in Huntsville where the Saturn V is located. It's a good cause, at least. (submitted by JohnCarter17)

Next three launches

July 19: Falcon 9 | Anasis-2 | Cape Canaveral, Fla. | 21:00 UTC

July 19: H-2A | Emirates Mars Mission "Hope" | Tanegashima, Japan | TBD

July 23: Long March 5 | Tianwen-1 Mars mission | Wenchang Satellite Launch Center, China | TBD



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