

# South Korea launches first satellite with homegrown rocket

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The Nuri rocket, the first domestically produced space rocket, lifts off from a launch pad at the Naro Space Center in Goheung, South Korea, Tuesday, June 21, 2022. South Korea launched its first domestically built space rocket on Tuesday in the country's second attempt, months after its earlier liftoff failed to place a payload into orbit. Credit: Korea Pool/Yonhap via AP

South Korea conducted its first successful satellite launch using a domestically developed rocket on Tuesday, officials said, boosting its growing aerospace ambitions and demonstrating it has key technologies needed to launch spy satellites and build larger missiles amid tensions with rival North Korea.

The three-stage Nuri rocket placed a functioning "performance verification" satellite at a target altitude of 700 kilometers (435 miles) after its 4 p.m. liftoff from South Korea's space launch center on a southern island, the Science Ministry said.

The satellite transmitted signals about its status to an unmanned South Korean station in Antarctica. It is carrying four smaller satellites that will be released in coming days for Earth observation and other missions, ministry officials said.

"The science and technology of the Republic of Korea have made a great advance," Science Minister Lee Jong-Ho said in a televised news conference at the launch center. "The government will continue its audacious march toward becoming a space power together with the people."

In a video conference with scientists and others involved in the launch, President Yoon Suk Yeol congratulated them for their achievement and vowed to keep his campaign promise to establish a state aerospace agency, according to his office.

Live TV video showed the 47-meter (154-foot) rocket rising into the air amid bright flames and thick white smoke.



People watch the Nuri rocket, the first domestically produced space rocket, taking off from the launch pad near the Naro Space Center in Goheung, South Korea, Tuesday, June 21, 2022. South Korea launched its first domestically built space rocket on Tuesday in the country's second attempt, months after its earlier liftoff failed to place a payload into orbit. Credit: Chun Jung-in/Yonhap via AP

The launch made South Korea the world's 10th nation to place a satellite into space with its own technology.

It was South Korea's second launch of a Nuri rocket. In the first attempt last October, the rocket's dummy payload reached the desired altitude but didn't enter orbit because the engine of the rocket's third stage burned out earlier than planned.



South Korea, which has the world's 10th largest economy, is a major producer of semiconductors, automobiles and smartphones. But its space development program lags behind that of Asian neighbors China, India and Japan.

North Korea placed Earth observation satellites into orbit in 2012 and 2016, though there is no proof that either one has ever transmitted spaced-based imagery and data back home. The North Korean launches resulted in U.N. economic sanctions because they were viewed as covers for testing the country's banned long-range missile technology.



South Korea President Yoon Suk Yeol, center, celebrates the successful launch of the Nuri rocket, the first domestically produced space rocket, at the presidential office in Seoul, South Korea, Tuesday, June 21, 2022. South Korea launched its first domestically built space rocket on Tuesday in the country's second attempt, months after its earlier liftoff failed to place a payload into orbit. Credit: Ahn Jung-won/Yonhap via AP

Since the early 1990s, South Korea has sent a slew of satellites into space, but all used foreign rocket technology or launch sites. In 2013, South Korea successfully launched a satellite for the first time from its soil, but the first stage of the rocket was Russian-made.

After that satellite launch, North Korea's Foreign Ministry accused the United States of having "double standards and brigandish nature," arguing that Washington supported the South Korean launch but led the U.N. sanctions over the North's satellite launch the previous year. North Korea didn't immediately comment on Tuesday's Nuri launch.

South Korea plans four more Nuri launches in coming years. It also hopes to send a probe to the moon, build next-generation space launch vehicles and send large-scale satellites into orbit.





In this photo provided by Korea Aerospace Research Institute, the Nuri rocket, the first domestically produced space rocket, lifts off from a launch pad at the Naro Space Center in Goheung, South Korea, Tuesday, June 21, 2022. South Korea successfully launched its first homegrown space rocket on Tuesday, officials said, a triumph that boosted the country's growing space ambitions but also proved it has key technologies to build a space-based surveillance system and bigger missiles amid animosities with rival North Korea. Credit: Korea Aerospace Research Institute via AP

South Korean officials said the Nuri rocket has no military purposes.

The transfer of space launch technology is strictly restricted under a multilateral export control regime because it has military applications. Ballistic missiles and space launch vehicles often share similar bodies, engines and other components, though missiles require a reentry capability and other technologies.

"If you put a satellite on the top of a rocket, it would become a space launch vehicle. But if you mount a warhead on it, it becomes a weapon," said Kwon Yong Soo, a former professor at Korea National Defense University in South Korea. "(A successful launch) is really meaningful because we also succeed in the test of a long-range rocket that can be used to build a long-range missile."

Lee Choon Geun, an honorary research fellow at South Korea's Science and Technology Policy Institute, said it would be difficult to directly use Nuri as a missile because it employs liquid fuels that must be kept at extremely low temperatures and requires much longer fueling time than solid fuels. He said North Korean long-range missiles also use liquid fuels, but extremely toxic ones that are maintained at ordinary

temperatures and require less fueling time than Nuri.

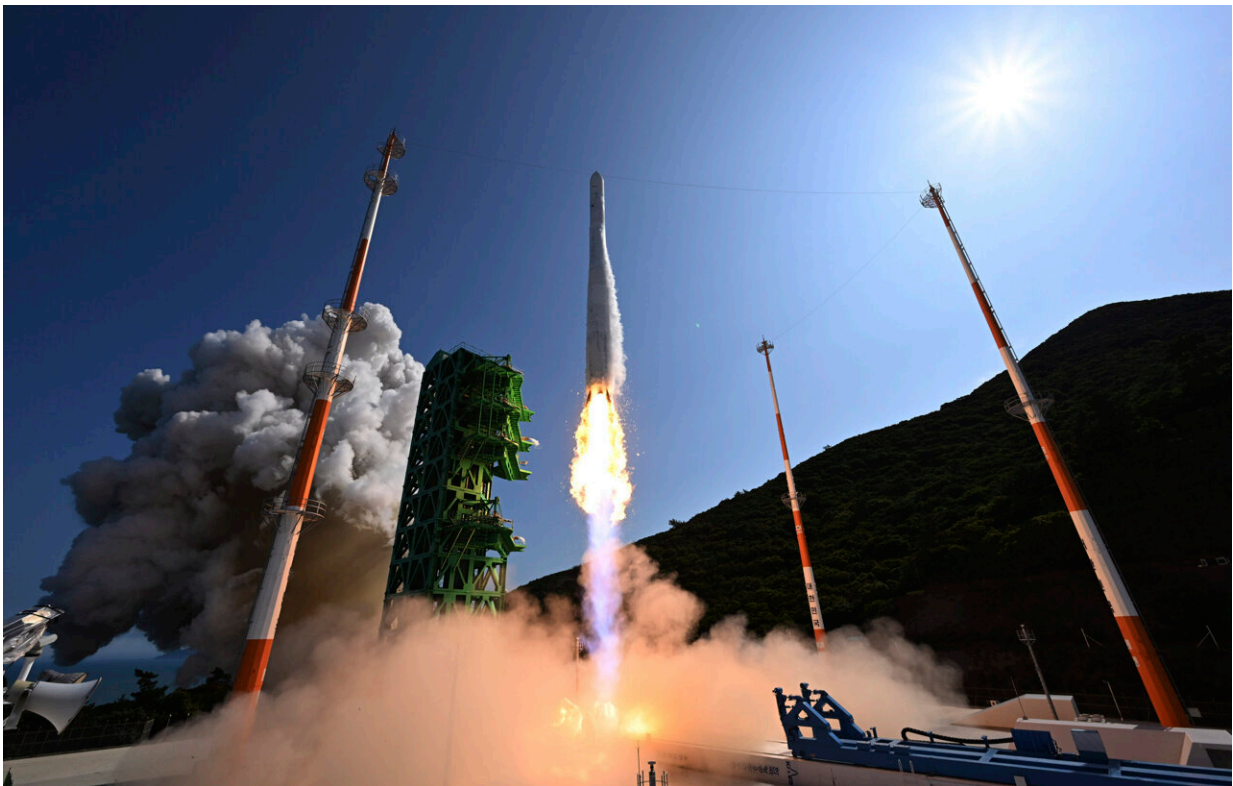


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Credit: Korea Pool/Yonhap via AP



People watch a TV screen showing a live news program at a train station in Seoul, South Korea, Tuesday, June 21, 2022. South Korea launched its first domestically built space rocket on Tuesday in the country's second attempt, months after its earlier liftoff failed to place a payload into orbit. Credit: AP Photo/Lee Jin-man





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People watch a TV screen showing a news program about the country's rocket launch at a train station in Seoul, South Korea, Tuesday, June 21, 2022. South Korea launched its first domestically built space rocket on Tuesday in the country's second attempt, months after its earlier liftoff failed to place a payload into orbit. Credit: AP Photo/Lee Jin-man







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This year, North Korea has test-launched about 30 missiles with ranges that potentially place the U.S. mainland and regional allies South Korea and Japan within striking distance.

South Korea already has missiles that can hit all of North Korea, but some experts say it also needs longer-range missiles because it's surrounded by regional military powers and potential adversaries.

"If we only think about North Korea, a long-range missile doesn't mean much for us. But it's very unfortunate that military powers like China and Russia are near us," Kwon said.

He said Nuri's successful launch proves South Korea has the capability to send a spy satellite into orbit. Lee said Nuri can be used to launch a spy satellite, but it would be better for South Korea to have many small spy satellites that could be sent up with less powerful solid-fueled rockets.

South Korea currently has no military reconnaissance satellites of its own and depends on U.S. spy satellites to monitor strategic facilities in North Korea. South Korea has said it plans to launch its own surveillance satellites soon.

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