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The sea-borne variant of the CERES 1 carrier rocket is launched on Tuesday from a mobile launch platform in the Yellow Sea off the coast of Shandong province. HUANG YANGYANG / FOR CHINA DAILY

Sea launch 1st by Chinese private entity

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Galactic Energy has become the first Chinese private company to carry out a sea-based launch mission.

The Beijing-based company announced on Tuesday evening that the sea-borne variant of its CERES 1 carrier rocket conducted its first liftoff at 5:34 pm that day from a mobile launch platform — a modified deck barge — in the Yellow Sea off the eastern province of Shandong. It then sent four satellites into an orbit about 800 kilometers above Earth.

The satellites were built by Guodian Gaoke, a Beijing-based satellite operator, and will be used to collect data for the internet of things, according to Galactic Energy.

The CERES 1 has become the third Chinese rocket model, and the

first made by the private sector, capable of liftoff on land and at sea.

Before it, China had performed five sea-based launches — four by the Long March 11 rocket and one by the Smart Dragon 3 — which transported 37 satellites to orbit. Both types are products of the China Academy of Launch Vehicle Technology, a subsidiary of State-owned China Aerospace Science and Technology Corp.

Xia Dongkun, a vice-president at Galactic Energy, told China Daily that his company chose to carry out sea-based launches because this method gives it an alternative to China's land-based launch facilities that are already busy handling government-backed programs.

"It enables us to make more launches each year," Xia said, noting another consideration is about safety and efficiency.

Compared with conventional land-based launches, a sea mission

has a lower risk of causing trouble for densely populated areas along the rocket's trajectory. The method also allows launches to be made near the equator, which increases the rocket's carrying capacity, lowers launch costs and extends the life span of some satellites, he explained.

So far, Galactic Energy has carried out nine orbital launches in a row, far outperforming other private competitors.

These CERES 1 flights have placed a total of 33 satellites into space.

The solid-propellant CERES 1 is about 20 meters tall and has a diameter of 1.4 meters.

With a liftoff weight of 33 metric tons, it is capable of sending a 300-kilogram satellite or several satellites with a combined weight of 300 kg, to a 500-km sun-synchronous orbit, or 350-kg payloads to a low-Earth orbit at an altitude of 200 km.