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Korea's first lunar orbiter Danuri set for launch

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Korea's lunar orbiter, Danuri, is fully prepared for a successful launch on Friday, according to the state-run aeronautics and space agency, Thursday.

The orbiter, otherwise known as the Korea Pathfinder Lunar Orbiter (KPLO), was developed by the Korea Aerospace Research Institute (KARI), with assistance of the U.S. National Aeronautics and Space Administration (NASA).

Danuri left Incheon International Airport, July 5, and arrived at Cape Canaveral Space Force Station (CCSFS) in Florida, July 7. It will be launched for its moon mission at 8:08 a.m., Friday, carried by SpaceX's Falcon 9, a U.S. rocket.

The liftoff had been initially scheduled for Wednesday, but faced a two-day delay due to rocket maintenance issues.

The orbiter was erected around 3 p.m., Thursday, for a final checkup before countdown including fueling. The Falcon 9 will release Danuri



SpaceX's Falcon 9 carrying Danuri remains ready for liftoff at Cape Canaveral Space Force Station in Florida, Aug. 3 (local time).
Courtesy of Ministry of Science and ICT

about 40 minutes after the launch at an altitude of 1,656 kilometers, following first- and second-stage separations.

Its computer will activate a program before entering the expected trajectory. The first communication with KARI will be possible about 60 minutes after launch.

About four months of operation thereafter will be monitored jointly

by KARI and their counterparts at NASA.

Danuri will use Ballistic Lunar Transfer (BLT), a "low-energy" transfer from the Earth to the moon using the gravity of both and that of the sun. The method uses less energy and thus conserves fuel by about 25 percent, but takes longer to reach the destination.

The orbiter will first enter lunar

orbit, Dec. 16, and make five trajectory corrections thereafter to approach low lunar orbit, a mark below 100 kilometers in altitude, Dec. 31.

It then will commence initial operation and conduct function tests for one month, before beginning 11 months of full operation through December.

Friday's liftoff followed a press briefing in early June, organized after KARI officials completed a pre-shipment review. They carried out extensive space environment simulation tests, as measured by extreme temperature and electromagnetic condition simulations.

KARI said the liftoff will proceed as planned, without any issues.

"We are fully prepared for the liftoff, an assessment by researchers who have been closely monitoring since Danuri's arrival in the U.S.," a KARI official said. "We are aware of high anticipation from the public. We hope the years of efforts by scientists and researchers will advance the country's space exploration initiative."