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Danuri enters moon's orbit

By Baek Byung-yeol
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The Danuri lunar orbiter began entering the moon's orbit on Saturday, 135 days after Korea's domestically developed space vehicle was launched on Aug. 5, according to the Korea Aerospace Research Institute (KARI), Saturday.

The KARI said that the Danuri performed its first of five lunar orbit insertion (LOI) maneuvers at 2:45 a.m. on Saturday. The maneuver involved the process of reducing its speed so that the Danuri could be stably captured by the moon's gravity. During the process of slowing down, the Danuri operated thrusters for around 13 minutes to decelerate its speed from about 8,000 kilometers per hour to 7,500 kilometers per hour to reach its target position.

The KARI said the LOI process is a challenging task because the Danuri,

which moves faster than a bullet, must enter the lunar orbit, which itself moves at about 3,600 kilometers per hour.

Whether the first maneuver was successfully performed or not will be announced by the KARI and the Ministry of Science and ICT on Monday. The Danuri is scheduled to slow down its speed four more times until Dec. 28. The second slowdown will be conducted on Dec. 21.

"The LOI process was carried out by automatically executing the commands sent to the Danuri in advance at a set time. But every situation before and after the LOI was monitored in real-time on the ground," the KARI said.

Carried by SpaceX's Falcon 9 rocket, the unmanned space vehicle, the Danuri, was launched from Cape Canaveral Space Force Station in Florida on Aug. 5.

After going through a total of five



This photo taken by the Danuri lunar orbiter shows the earth and the moon on Nov. 28. The Ministry of Science and ICT said Thursday that the Danuri took the photo when the earth and the moon looked similar in size when viewed from the lunar orbiter.

Courtesy of Ministry of Science and ICT

lunar orbit entry maneuvers, until Dec. 28, the Danuri is scheduled to settle into the moon's orbit, which is 100 kilometers above the moon.

If it is confirmed to have successfully entered the moon's orbit, the Danuri will carry out scientific missions for a year from January. Its missions include finding a spacecraft moon landing site, measuring the magnetic field and gamma rays and testing space-based internet communication.

The Danuri is seen as Korea's first step toward space. The country recently announced its ambitious space development projects includ-

ing a moon landing by 2032 and Mars by 2045.

During its four-month voyage, Danuri has achieved meaningful results for Korea's space program. It took photos of the earth and the moon with a high-resolution camera on Aug. 26 and 29, sending the first photo taken outside the earth's gravitational zone by domestically developed Korean technology. On August 25 and October 28, the Danuri succeeded in communicating by sending data such as images, photos and text messages from space back to Earth.

Heroes behind successful launch of Nuri space rocket offer to resign

By Park Jae-hyuk
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The Korea Aerospace Research Institute's (KARI) recent organizational reform plan has prompted its senior researchers to offer to resign. These are the very same researchers who played major roles in the development of the Korea Space Launch Vehicle II (KSLV-II), or the Nuri, the nation's first home-grown space rocket launched successfully in June.

According to the state-run space research institute, Friday, KARI principal researcher Ko Jeong-hwan, head of the KSLV-II R&D directorate, and his five colleagues, offered to resign, after Monday's announcement of the institute's plan to streamline its organizational structure.

The KARI plans to set up the launch vehicle research institute, which will supervise the KSLV advancement program office, which is in charge of additional launches of the Nuri, the next-generation launch vehicle program office in charge of developing the 100-ton liquid-propellant rocket engine and the small launch vehicle research team.

The KSLV-II R&D directorate will be disbanded in June of next year.

Ko claims that the organizational reform plan will lead the directorate, which currently has more than 250 workers, to have only five staff under one leader.

"Through the organizational reform plan, KARI virtually disbanded the R&D team under the directorate," he said in a let-

ter sent to the Ministry of Science and ICT, which supervises the institute.

Ko also emphasized that the reform will inhibit the third launch of the Nuri and the transfer of KARI's technology to the private sector. This possible exodus of researchers has therefore caused concerns over a possible setback to Korea's plan for space exploration.

Based on the successful launches of the Nuri and the domestically developed Danuri lunar orbiter, Korea has sought to become one of the space powerhouses. The government will also open the space agency, thereby emulating the U.S. National Aeronautics and Space Administration next year, tasked with directing the nation's overall space policies.

The KARI explained that its planned organizational reform is intended for its transformation into an integrated research institute for next-generation launch vehicle projects.

The institute dismissed the speculation that its reform plan is a follow-up measure to comply with the government's innovation guidelines urging public institutions to enhance productivity and efficiency.

"After the organizational reform, the number of launch vehicle researchers will go up slightly," a KARI official said in a press release.

Amid the controversy, the science ministry is said to have met with Ko and KARI President Lee Sang-ryool on Wednesday. However, the ministry failed to bring them to an agreement.



Ko Jeong-hwan, head of the Korea Aerospace Research Institute's Korea Space Launch Vehicle II R&D directorate
Korea Times photo by Seo Woo-han