

Ball Aerospace-built Geostationary Air Quality Instrument Launches Successfully

The Geostationary Environment Monitoring Spectrometer instrument launched on board the Korea Aerospace Research Institute's GEO-KOMPSAT-2B satellite

BOULDER, Colo., Feb. 18, 2020 /PRNewswire/ -- The Geostationary Environment Monitoring Spectrometer (GEMS) instrument, jointly developed by Ball Aerospace and Korea Aerospace Research Institute (KARI) under the leadership of Ball Aerospace, launched successfully on Feb. 18, 2020. GEMS was integrated onto KARI's GEO-KOMPSAT-2B satellite.

Once operational in space, GEMS will be the first air quality sensor in geostationary orbit where it will help monitor pollution events in the Korean peninsula and Asia-Pacific region.

"GEMS is a result of more than 30 years of innovation in advanced spectrometers at Ball Aerospace," said Dr. Makenzie Lystrup, vice president and general manager, Civil Space, Ball Aerospace. "Data from GEMS will enable KARI's mission to assess and forecast air pollution by identifying sources and distribution of pollutants in the atmosphere."

Ball Aerospace led GEMS development under a contract with KARI for the National Institute of Environmental Research in the Ministry of Environment of South Korea. GEMS will make hourly measurements of key constituents that make up air pollution, including ozone and nitrogen dioxide, which will improve early warnings for potentially dangerous pollution events.

GEMS is one part of a global air quality monitoring constellation of geostationary satellites that will include NASA's [Tropospheric Emissions: Monitoring of Pollution](#) (TEMPO) spectrometer. Ball completed TEMPO in September 2018 for NASA Langley Research Center and Harvard Smithsonian Astrophysical Observatory. TEMPO is scheduled to launch in 2022.

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This release contains "forward-looking" statements concerning future events and financial performance. Words such as "expects," "anticipates," "estimates," "believes," "targets," "likely," "positions" and similar expressions typically identify forward-looking statements, which are generally any statements other than statements of historical fact. Such statements are based on current expectations or views of the future and are subject to risks and uncertainties, which could cause actual results or events to differ materially from those expressed or implied. You should therefore not place undue reliance upon any forward-looking statements and any such statements should be read in conjunction with, and, qualified in their entirety by, the cautionary statements referenced below. The company undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Key factors, risks and uncertainties that could cause actual outcomes and results to be different are summarized in filings with the Securities and Exchange Commission, including Exhibit 99 in our Form 10-K, which are available on our website and at www.sec.gov. Additional factors that might affect: a) our packaging segments include product capacity, supply, and demand constraints and fluctuations; availability/cost of raw materials and logistics; competitive packaging, pricing and substitution; changes in climate and weather; footprint adjustments and other manufacturing changes, including the startup of new facilities and lines; failure to achieve synergies, productivity improvements or cost reductions; mandatory deposit or other restrictive packaging laws; customer and supplier consolidation; power and supply chain interruptions; potential delays and tariffs related to the U.K's



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