

## Ball Aerospace's Land Imaging Instrument on NASA's Landsat 9 Satellite Launches Successfully

BROOMFIELD, Colo., Sept. 27, 2021 /PRNewswire/ -- The Ball Aerospace-built Operational Land Imager 2 (OLI-2) instrument successfully launched today aboard Landsat 9, the latest in a series of joint missions between NASA and the United States Geological Society (USGS) that has provided essential monitoring of key natural and economic resources from orbit for nearly 50 years.



"It is an honor to be a part of this important launch that will carry the Landsat mission into its next decade of existence and continue the longest-running Earth observation program," said Dr. Makenzie Lystrup, vice president and general manager, Civil Space, Ball Aerospace. "Our goal was to develop a technologically advanced solution that was both cost effective and capable of delivering highly-calibrated multispectral imagery and improved land surface information. This launch is the culmination of a lot of hard work by a lot of talented people to achieve that goal."

In addition to the instrument (OLI-2), Ball designed and built the cryocooler that will keep Landsat 9's Thermal Infrared Sensor 2 (TIRS-2) chilled to a frigid 40 Kelvin (-388 F). The TIRS-2 instrument, designed and built by NASA Goddard Space Flight Center, measures thermal radiance emitted from the Earth's surface.

The OLI-2 instrument, similar to its predecessor – OLI-1 launched in 2013 – is a push-broom sensor with a four-mirror telescope that takes measurements in the visible, near infrared and shortwave infrared portions of the electromagnetic spectrum. The OLI-2 instrument on Landsat 9 will image the Earth every 16 days in an eight-day offset with Landsat 8. Landsat 9 will collect as many as 750 scenes per day, and with Landsat 8, the two satellites will add nearly 1,500 new scenes a day to the USGS Landsat archive.

Since 1972, Landsat satellites have provided essential measurements to help the Nation make informed decisions about natural resource management, including compiling routine drought assessments; developing wildfire prevention strategies; monitoring land surface changes; evaluating agricultural production; and understanding the Earth's ecosystem.

As Landsat 9 begins its tour of duty, Ball is already exploring innovative technologies that could support future Landsat missions. It recently completed [three studies for NASA](#) examining the potential for precisely calibrated sensors that are significantly smaller, lighter and use less power. Additionally, Ball was selected in August to conduct [two six-month architecture studies](#) on extending Ball's Operational Land Imager (OLI) and Reduced Envelope Multispectral Imager (REMI) instrument designs to address new spectral bands, improved spatial resolution and new orbit parameters.

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### Forward-Looking Statements

This release contains "forward-looking" statements concerning future events and financial performance. Words such as "expects," "anticipates," "estimates," "believes," 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](http://www.sec.gov). Additional factors that might affect: a) our packaging segments include product capacity, supply, and demand constraints and fluctuations and changes in consumption patterns; availability/cost of raw materials, equipment, 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; unfavorable mandatory deposit or packaging laws; customer and supplier consolidation; power and supply chain interruptions; changes in major customer or supplier contracts or loss of a major customer or supplier; political instability and sanctions; currency controls; changes in foreign exchange or tax rates; and tariffs, trade actions, or other governmental actions, including business restrictions and shelter-in-place orders in any country or jurisdiction affecting goods produced by us or in our supply chain, including imported raw materials; b) our aerospace segment include funding, authorization, availability and returns of government and commercial contracts; and delays, extensions and technical uncertainties affecting segment contracts; c) the Company as a whole include those listed above plus: the extent to which sustainability-related opportunities arise and can be capitalized upon; changes in senior management, succession, and the ability to attract and retain skilled labor; regulatory actions or issues including those related to tax, ESG reporting, competition, environmental, health and workplace safety, including U.S. FDA and other actions or public concerns affecting products filled in our containers, or chemicals or substances used in raw materials or in the manufacturing process; technological developments and innovations; the ability to manage cyber threats; litigation; strikes; disease; pandemic; labor cost changes; rates of return on assets of the Company's defined benefit retirement plans; pension changes; uncertainties surrounding geopolitical events and governmental policies both in the U.S. and in other countries, including policies, orders, and actions related to COVID-19; reduced cash flow; interest rates affecting our debt; and successful or unsuccessful joint ventures, acquisitions and divestitures, and their effects on our operating results and business generally.



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