

Ball Aerospace Completes Critical Design Review of NASA's IXPE Mission **Ball Aerospace is responsible for building the small satellite for the mission**

BOULDER, Colo., July 10, 2019 /[PRNewswire](#)/ -- The mission critical design review (M-CDR) of NASA's Imaging X-Ray Polarimetry Explorer (IXPE) space-based astrophysics observatory was recently completed at Ball Aerospace's Boulder, Colorado, facility. The IXPE mission is led by NASA's Marshall Space Flight Center, with support from Ball Aerospace, the Italian Space Agency (ASI), Laboratory for Atmospheric and Space Physics at University of Colorado Boulder and other partners.

IXPE is a Small Explorer, or SMEX mission, which is part of NASA's Astrophysics Explorer Program. Dr. Martin C. Weisskopf, NASA Marshall Space Flight Center, is the principal investigator for the mission. Once launched in 2021, IXPE will measure the polarization of cosmic X-rays to improve our understanding of the fundamental physics of extreme and exotic objects in the universe, such as black holes.

"IXPE is an excellent example of an integrated team comprising government, industry and academia focused on a common purpose to deliver exciting and important science – the kind of work Ball loves to do," said Dr. Makenzie Lystrup, vice president and general manager, Civil Space, Ball Aerospace. "With M-CDR now complete we focus on hardware production, which includes the Ball Configurable Platform, or BCP, small satellite."



Ball Aerospace is responsible for providing the IXPE spacecraft, mechanical and structural elements of the payload, observatory assembly, and integration and test for IXPE. Ball Aerospace will leverage its BCP heritage of small, low-cost satellite buses that have a successful history of exceeding mission design life. The BCP has a broad spectrum of capabilities, is highly-reliable and has proven stability and pointing performance, which are essential for astrophysics missions.

The IXPE mission will fly Ball's smallest BCP model, about the size of a mini refrigerator, and similar to the BCP built for NASA's recently-launched Green Propellant Infusion Mission (GPIM), which is already commissioned and delivering textbook performance. In addition to the GPIM small satellite, there are two additional BCP small satellites performing on orbit: STPSat-2, which launched in November 2010, and STPSat-3, which launched in November 2013. The two STP satellites were built for the U.S. Air Force Space Test Program's Standard Interface Vehicle (STP-SIV) project.

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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 demand fluctuations; availability/cost of raw materials and logistics; competitive packaging, pricing and substitution; changes in climate and weather; footprint adjustments and other manufacturing changes; failure to achieve synergies, productivity improvements or cost reductions; mandatory deposit or other restrictive packaging laws; customer and supplier consolidation, power and supply chain influence; changes in major customer or supplier contracts or a 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 in any country affecting goods produced by us or in our supply chain, including imported raw materials, such as pursuant to section 232 of the U.S. Trade Expansion Act of 1962; 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 plus: changes in senior management; regulatory action or issues including tax, 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; litigation; strikes; 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 the U.S. government elections, budget, sequestration and debt limit; reduced cash flow; interest rates affecting our debt; and successful or unsuccessful joint ventures, acquisitions and divestitures, including with respect to the Rexam PLC acquisition and its integration, or the associated divestiture; the effect of the acquisition or the divestiture on our business relationships, operating results and business generally.

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