

NASA Chooses Ball Aerospace for CMEx Mission Concept Study: Aiming to Decode Solar Magnetism

BROOMFIELD, Colo., Dec. 12, 2023 /PRNewswire/ -- Ball Aerospace was selected to manage a concept study for NASA's Chromospheric Magnetism Explorer (CMEx), a proposed mission concept that could provide new insights into how magnetism drives eruptive activity on and near the surface of the sun. The science of CMEx aims to help the scientific community better its understanding of our sun and its impacts on space, Earth and other planets.

The prospective mission concept would use a near ultraviolet spectropolarimeter as its primary scientific instrument to make novel observations of the sun's magnetic field as it evolves from the photosphere through the chromosphere, the layer of the sun's atmosphere above the visible surface. This data will give scientists a better understanding of how magnetic energy buildup leads to eruptions such as solar flares and coronal mass ejections, a major gap in our current heliophysics research capabilities.

CMEx also aims to identify the magnetic sources of solar wind, which would help explain discrepancies between observed magnetic flux near the solar surface and the magnetic flux measured near the Earth — called the "open flux problem" — which currently makes space weather predictions less accurate.

"The CMEx mission concept provides a unique opportunity to answer some of the biggest questions we still have about the sun, and it could help to mature our spectropolarimetry capabilities considerably," said Lisa Wood, senior director, Strategic Operations, Ball Aerospace. "We're excited about the prospect of leading such a fascinating mission."

Dr. Holly Gilbert, director of the National Center for Atmospheric Research's (NCAR) High Altitude Observatory (HAO), will serve as the principal investigator for the nine-month study. If CMEx is down-selected at the end of the Explorers Program concept study, the investigation will move into detailed design and, pending a successful preliminary design review, mission implementation. NCAR/HAO will lead the science mission, and Ball Aerospace will manage the project, build the state-of-the-art spectropolarimeter and spacecraft, and operate the mission. The project continues Ball Aerospace's legacy of providing reliable, cutting-edge hardware for NASA's Explorers program.

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For further information: Media Contact: Sawyer D'Argonne, (303) 250-6031, sawyer.dargonne@ballaerospace.com; Investor Relations: Ann Scott, (303) 460-3537, ascott@ball.com

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