

# NIRCam's Optical System Excels In Integrated Tests For James Webb Telescope

*Primary Optical Payload Raises Bar for Most Powerful Space Telescope Ever Built*

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PALO ALTO, Calif., Jan. 6, 2015 /PRNewswire/ -- The Near Infrared Camera (NIRCam) instrument Lockheed Martin [NYSE: LMT] helped develop for NASA's next deep space telescope surpassed expectations during tests in late 2014. It will see farther into the cosmos and further back in time than any other instrument. Scientists are preparing NIRCam for new trials beginning this year.

Produced under contract with the University of Arizona, NIRCam is the primary science camera on the James Webb Space Telescope (JWST), and it also functions as the sensor that is used to align the observatory's primary mirror.

NIRCam performed significantly better than requirements during the first integrated, cryogenic testing program at Goddard Space Flight Center, Maryland. In April NASA installed the instrument alongside others in the Integrated Science Instrument Module (ISIM), which finished cryogenic and vacuum testing late last year. The ISIM is preparing for vibration testing, scheduled to occur in early 2015.

Unlike Hubble's single monolithic primary mirror, JWST's primary mirror is made up of 18 individual, adjustable segments that will be aligned in space. NIRCam's performance is essential to the telescope's success.

"We designed NIRCam to stringent optical and environmental requirements so it can deliver images from the early origins of the universe," said Alison Nordt, NIRCam program manager at Lockheed Martin. "JWST is an infrared observatory, requiring all of the optical components to operate at a cryogenic temperature under 40 Kelvin, which is six times colder than your average freezer. That's a significant challenge when you're building low-distortion optical mounts, aligning optics at room temperature and designing mechanisms to move precisely."

NIRCam is one of many precision optical payloads Lockheed Martin designs, develops and produces for scientific and commercial customers, NASA and other government organizations. Lockheed Martin has a deep understanding of optical and infrared missions and their technologies, building on decades of experience to deliver high performing and reliable optical systems.

Headquartered in Bethesda, Maryland, Lockheed Martin is a global security and aerospace company that employs approximately 113,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The Corporation's net sales for 2013 were \$45.4 billion.

**Media Contact:**

Mark E. Lewis, 408-742-3516, [mark.e.lewis@lmco.com](mailto:mark.e.lewis@lmco.com)

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