

Lockheed Martin Completes Assembly Of Near Infrared Camera For NASA'S James Webb Space Telescope. Environmental Testing To Begin.

PR Newswire
PALO ALTO, Calif.

PALO ALTO, Calif., April 16, 2012 /PRNewswire/ -- Lockheed Martin (NYSE: LMT), under a contract from the University of Arizona (U of Az), has completed assembly of the Near Infrared Camera (NIRCam) Instrument Modules. NIRCam is the prime near-infrared imaging instrument for NASA's James Webb Space Telescope (JWST). The work was done at the Lockheed Martin Space Systems Advanced Technology Center (ATC) in Palo Alto, where environmental testing is about to begin. U of Az and Lockheed Martin are responsible for the NIRCam instrument design (Optical, Mechanical, Structural, Thermal, Electronic, Precision Mechanisms and Control Software), the instrument control and focal plane electronics and software. Delivery of the NIRCam instrument to the NASA Goddard Space Flight Center is expected to occur in late summer 2012.

"It is very satisfying to have completed assembly of this magnificent astrophysical instrument," said Jeff Vanden Beukel, Lockheed Martin NIRCam program director. "We look forward, along with all of our other colleagues on the JWST team, to the day when our engineering and manufacturing help produce discoveries and greater understanding of the Universe."

"As we view the Universe with more powerful tools, not only do we confirm or overturn current concepts, but we always learn new and exciting things," said Dr. Marcia Rieke of U of Az, and NIRCam principal investigator. "I couldn't be happier that we've reached this milestone, and I'm certain that all of the hard work and terrific collaboration of the NIRCam team will lead to a very big payoff not too far down the line."

The NIRCam instrument consists of two identical optical imaging modules and contains focal plane assemblies (FPA) provided by Teledyne Imaging Sensors of Camarillo, Calif. The FPA hardware consists of 40 million pixels, and is designed for cryogenic operation at 35 degrees Kelvin. The FPA hardware requires regulated power, output data synchronization, temperature control and operational mode controls as well as image data conditioning, amplification and digitization. The NIRCam focal plane electronics (FPE) and its associated software will provide these functions. The FPE hardware and software also convey the image data to the JWST integrated science instrument module command and data handling computer.

NIRCam is the primary near infrared imaging instrument on JWST. It will detect light from the earliest stars and galaxies in the process of formation, young stars in the Milky Way, physical and chemical properties of planets orbiting other stars, and objects within our Solar System. NIRCam is equipped with coronagraphs, instruments that allow astronomers to take pictures of very faint objects around a central bright object, like planets around distant stars. NIRCam's coronagraphs work by blocking a brighter object's light, making it possible to view the dimmer object nearby – just like shielding the sun from your eyes with an upraised hand can allow you to focus on the view in front of you. With the coronagraphs, astronomers hope to determine the characteristics of planets orbiting nearby stars.

In addition to Lockheed Martin and the University of Arizona, the NIRCam team comprises Teledyne, and a team of science co-investigators. The team's NIRCam imager will achieve its mission goals through a compact modular refractive design with exceptionally high observing efficiency. In addition, built-in self-test features will significantly lower integration risk and provide on-orbit calibration.

The James Webb Space Telescope is NASA's next-generation space observatory and successor to the Hubble Space Telescope. The most powerful space telescope ever built, JWST will observe the most distant objects in the universe, provide images of the very first galaxies ever formed, provide insight to how solar systems evolve and help explore planets around distant stars. The Webb telescope is a joint project of NASA, the European Space Agency, and the Canadian Space Agency.

The NASA Goddard Space Flight Center manages the JWST project. Principal Investigators under contract to NASA, ESA, and CSA are developing scientific instruments for the observatory. The Space Telescope Science Institute in Baltimore, Md. is developing the ground system for the mission and will be responsible for observatory operations and science program management.

NIRCam is one of the scientific instruments managed by Lockheed Martin's Sensing & Exploration Systems line of

business. The instrument was designed and built at the ATC in Palo Alto, Calif. The ATC is the research and development organization of Lockheed Martin Space Systems Company (LMSSC). LMSSC, a major operating unit of Lockheed Martin Corporation, designs and develops, tests, manufactures and operates a full spectrum of advanced-technology systems for national security and military, civil government and commercial customers. Chief products include human space flight systems; a full range of remote sensing, navigation, meteorological and communications satellites and instruments; space observatories and interplanetary spacecraft; laser radar; ballistic missiles; missile defense systems; and nanotechnology research and development.

Headquartered in Bethesda, Md., Lockheed Martin is a global security and aerospace company that employs about 123,000 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 2011 were \$46.5 billion.

Media Contact: Buddy Nelson, (510) 797-0349; e-mail, buddy.nelson@lmco.com

For more information about NASA's Webb telescope, visit: www.jwst.nasa.gov

SOURCE Lockheed Martin

<https://news.lockheedmartin.com/2012-04-16-Lockheed-Martin-Completes-Assembly-of-Near-Infrared-Camera-for-NASAs-James-Webb-Space-Telescope-Environmental-Testing-to-Begin>