

# Building MODELS, Building INTEREST in



## LEGO® Building Bricks Teach Kids about the Webb Telescope

**MARY BLAKE**

**W**hen Mr. B's Bricks store owner Ken Brenan came to Northrop Grumman Aerospace Systems in 2007, he was looking for a donation to support a LEGO education program he was running for 22 different school sites in the Manhattan Beach, Calif., area. When Brenan left, he had an idea for a new educational tool that would pique children's interest in science and engineering and give them a fun way of learning about astronomy via the largest space telescope ever built.

The idea: Create a Webb telescope out of LEGO bricks and offer kids a chance to build it at science festivals, schools and outreach events supported by NASA, Northrop

Grumman and its major subcontractors that are helping to build the telescope for NASA's Goddard Space Flight Center in Greenbelt, Md.

But to create a Webb telescope out of LEGO bricks, Brenan needed to see what the telescope looked like from all sides — information that was not widely available at the time. Fortunately, one of the students in his after-school program offered to help. The student's father was Greg Davidson, who at the time was Northrop Grumman's Webb deputy program manager. At the urging of his son, Davidson provided overview drawings with top-level measurements, helping Brenan get the specifics he needed to begin putting together a prototype.

His first LEGO mockup contained about 250 pieces. He assembled the model two or three times to lower the piece count. "We look at two different aspects of a kit: piece count and availability," he explained. "The pieces must be available in LEGO inventory, and we want to keep the piece count as low as possible to minimize cost."

Brenan and the store's four employees spent 50 to 100 man-hours creating the model, which measures 8 inches by 6 inches by 8 inches and contains about 150 pieces. Because of his agreement with LEGO, Brenan is not actually offering branded LEGO sets. He sells instructions and includes the LEGO pieces, which he calls a kit.

When his store closed in 2008, Brenan

continued to assemble the kits with the help of his family and a few store employees. During the last three years, he has created 250 kits that are geared to kids between the ages of 6 and 8. It can take them from 30 to 60 minutes to build the Webb telescope using LEGO bricks.

The Webb telescope kits have traveled across the country, appearing at hundreds of trade shows and events such as the World Science Festival in New York, the USA Science and Engineering Festival on the National Mall in Washington, D.C., the American Institute of Aeronautics and Astronautics Space Education Alley, the *DETAILS* magazine NextFest event in Los Angeles and at the NASA exhibit during the ESPN X-Games at the

Home Depot Center in Carson, Calif.

Recently, The LEGO Group began a partnership with NASA to educate the next generation of scientists. During the next three years, both The LEGO Group and NASA will participate in a joint outreach and educational program designed to inspire children to explore science, technology, engineering and math. When the Space Shuttle Discovery blasts off from Cape Canaveral for its last scheduled flight, a small LEGO space shuttle model will accompany the crew.

"We have taken the excitement of NASA's missions and coupled that with kids' love of creating things with the iconic LEGO bricks," said Leland Melvin, NASA's associate

administrator for Education. "These projects not only foster creativity but also instill in the young builders a real sense of the engineering and design principles that NASA uses every day. Fun learning activities like these can help inspire kids to become the next generation of explorers."

For more information about the James Webb Space Telescope, visit [www.jwst.nasa.gov](http://www.jwst.nasa.gov)

For more information about The LEGO Group, visit [www.LEGO.com](http://www.LEGO.com)

For a Webb Telescope Lego Kit, visit <http://www.jwstinlego.com/>



Ben Ciprios shows off his model of a Webb telescope that he created out of LEGO bricks. Behind Ciprios is a full-scale model of the Webb telescope that appeared in New York City's Battery Park in June 2010.

Photo by Northrop Grumman Corp.

### greeNG/SAFETY/SECURITY NEWS



**CHRISTINA KULL**

The Northrop Grumman Financial Service/Payroll Organization, led by Micaela Keeton and sponsored by Lori Porter and Carolyn Pittman, initiated an effort to go "green." Supported by the Northrop Grumman Legal, Human Resources and Leadership teams, Payroll implemented changes from locations as diverse as Texas, New York, Virginia and California. Payroll's favorite green activity was instituting ePay and eliminating paper pay statements (as of Oct. 4, 2010), saving not only 84,000 sheets of paper a month but also \$400,000 annually. Employees can view their pay information and find out more about direct deposit via the Employee Direct Access link on the Aerospace Systems intranet home page (just click on Employee & Manager Direct Access, available under the Tools drop-down menu). Payroll's green tip: "Sign up now to elect to receive your W-2s electronically at [www.theworknumber.com](http://www.theworknumber.com) with employer code 11766, your MyID and pin. It'll help us all save even more paper and get W-2 information to you faster and safer!"

Nominate your green employee for recognition at <http://greeNG.as.northgrum.com>.

Shown top to bottom are the payroll teams who made the greening happen in Texas, New York and California.

