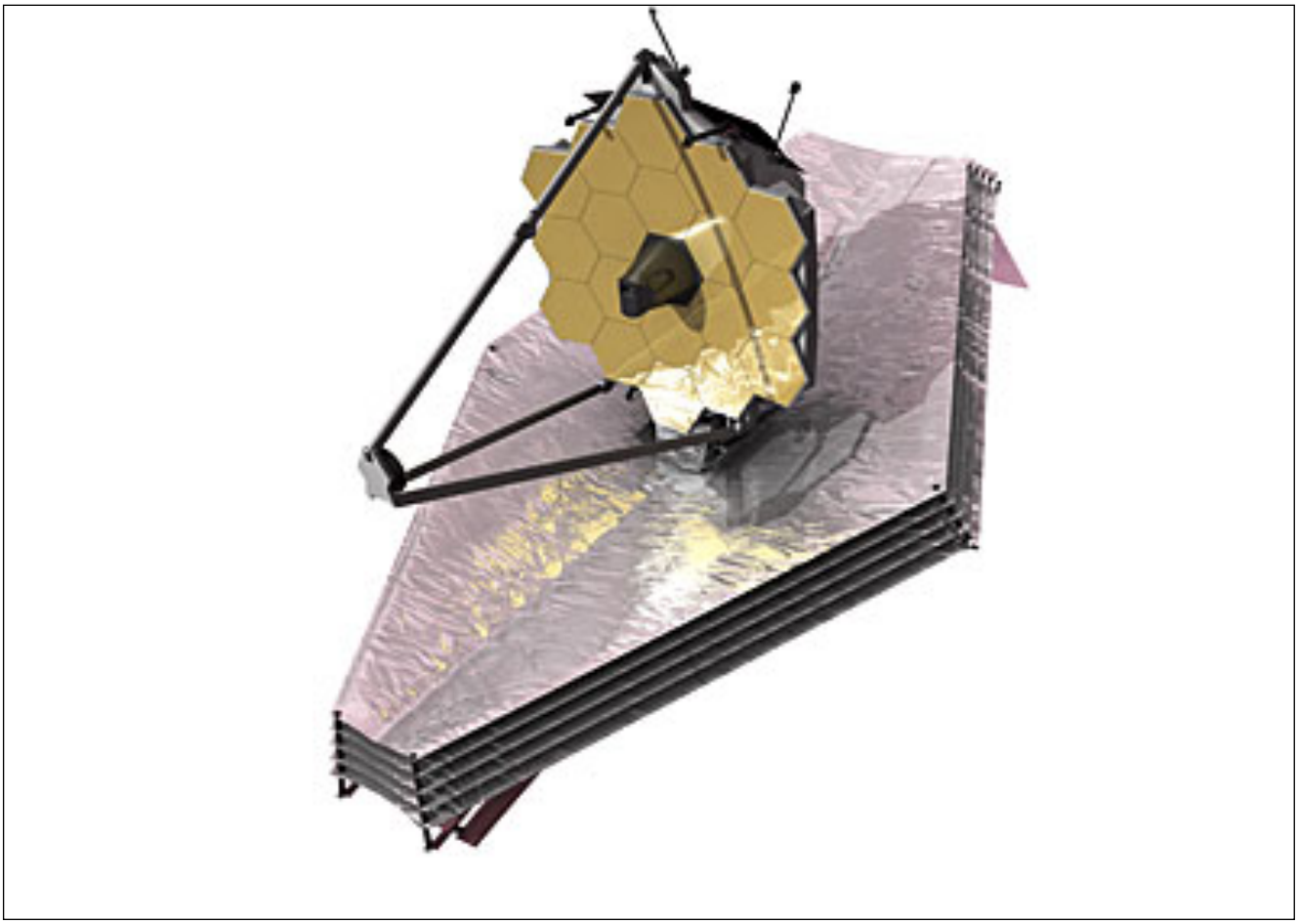
Coffee Bag Sunshield

A Replica of a James Webb Space Telescope Sunshield

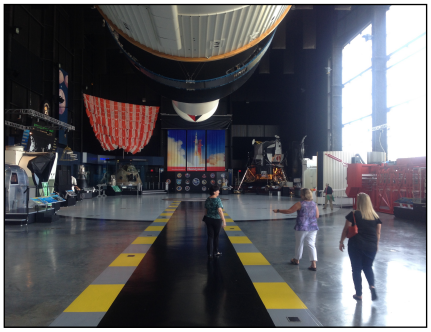
John Cranston, Engineer - December 19, 2015



The Project

My name is John Cranston, Sr. Materials and Process Engineer, for Nexolve Corp. For the past 7.5 years I have been working with many engineers and scientists to build the Sunshields for the James Webb Space Telescope, JWST. JWST is NASA's next orbiting observatory and the successor to the Hubble Space Telescope. A tennis court-sized telescope orbiting far beyond Earth's moon, Webb will detect infrared radiation and be capable of seeing in that wavelength as well as Hubble sees in visible light.





The “Coffee Bag Sunshield” started small, then grew bigger. Next stop is the US Space and Rocket Center.

History

The “Coffee Bag Sunshield“ project started 2.5 years ago. My granddaughter, Emma, 4th grader, wanted me to talk to her class about my work. You see Emma had visited me at work a few times over the years and I dressed her up in a lab coat and showed her how I made things for the sunshield. This apparently sparked an interest in science and engineering. I accepted, prepared and delivered the presentation. The children really liked the hands on tensile and peel tests we did with potato chip bags. When I got back to the office I made a pot of coffee and tore off the corner of the coffee bag and noticed the shiny silver inner bag. This looked just like the materials we were using to build the sunshield. **The idea was born**, a hands on project for Emma’s class building a replica sunshield from coffee bags.

Today

Now over 2.5 years later the project has grown. The “Coffee Bag Sunshield” project has grown to a full-scale sunshield, 70 feet by 48 feet replica, to be displayed at the US Space and Rocket Museum Davidson Center, 14 May 2016. Some of our partners are NASA Marshall Space Flight Center STEM, US Space and Rocket Center STEM, Space Telescope Science Institute STEM, NEXOLVE, MANTECH, Northrop Grumman engineers, schools, teachers,

friends, family and hundreds of students local and far off. STEM is an acronym that refers to the academic disciplines of Science, Technology, Engineering and Mathematics. The purpose of STEM like the "Coffee Bag Sunshield" project is to inspire the next generation through exciting presentations and hands on projects.

The students are taping together nearly 3000 coffee bags to complete the full scale "Coffee Bag Sunshield". The students are from many different schools and have each been making just small assemblies that will eventually come together to make the full scale coffee bag sunshield, 70' x 48'. The coffee bags are of two sizes, 1/3 sq. ft. and 3 sq. ft. When completed the sunshield will be displayed at the USSRC Davidson Center underneath the Saturn V Rocket. Each of the children and adults that helped build the sunshield will be invited for the raising of the sunshield. Contributions are being accepted through the USSRC Foundation to pay for the student's admission. All donations are tax exempt.

If you believe that inspiring the next generation is important to our nations future and your children's future contact me. There are many ways you can get involved, contact: John Cranston, john.cranston@nexolve.com.

P.S. A special thanks to all my coffee drinking friends at work and the local Starbucks.