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Summer 10-1-2023

Visiting the Columbia Scientific Balloon Facility in Palestine, Texas

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Recommended Citation

Reyes-Loya, Manuel and Cuellar, Cecilia, "Visiting the Columbia Scientific Balloon Facility in Palestine, Texas" (2023). *Hibbs Brief*. Paper 38.

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Hibbs Institute for Business & Economic Research

Visiting the Columbia Scientific Balloon Facility in Palestine, Texas

By Manuel Reyes, D.E.D. and Cecilia Cuellar, Ph.D.

In this issue of the [Hibbs Brief](#), we share some details about our visit to the Columbia Scientific Balloon Facility in Anderson County.

Less than 10 miles west of Palestine, Texas (about 60 miles southwest of Tyler), in the middle of a beautiful landscape full of pine trees, you will find an aerospace industry facility that develops advanced products using cutting-edge technology: the Columbia Scientific Balloon Facility (CSBF). CSBF is part of the Scientific Balloon Program Office, a suborbital space flight program sponsored by the National Aeronautics and Space Administration (NASA). The scientific balloon program supports space and earth sciences research activities that contribute to a better understanding of the Earth, the solar system and the universe.¹

The National Science Foundation moved its facility to Palestine, Texas, in 1962 from Boulder, Colorado. By 1973, it was established as the National Scientific Balloon Facility and started working with scientific balloons. NASA took over the administration of the facility in 1982.² Later, in 2006, it was renamed the Columbia Scientific Balloon Facility in commemoration of the Columbia Space Shuttle after its tragic accident in 2003.³ CSBF designs and develops scientific balloons that serve as a carrier for high-tech instruments (often referred to as payloads), which are taken to high altitudes (typically around 120,000 feet) to perform scientific and technological investigations.⁴



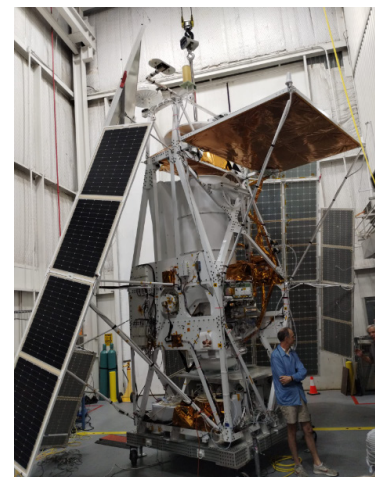
Source: Hibbs Institute for Business and Economic Research.



Source: NASA.

The balloon system includes the balloon, the payload and the parachute. The balloons are constructed of a thin but resistant polyethylene film filled with helium, so they can fly high and stay there for several weeks. The payload is the device provided with cutting-edge technology, such as radio receivers and transmitters, a solar power system, computers, batteries and other systems required for science experiments. It conducts the observations and experiments for the mission, gathering and transmitting data and information back to the operations station. At the end of the mission, the payload is released from the balloon, and the parachute opens, safely bringing the payload back to the ground for its recovery. The balloon also falls to the ground, where it is recovered and disposed of.⁵

Compared to space shuttles, scientific balloons offer a low-cost method of conducting scientific investigations. Their missions can be complementary to spacecraft missions or provide their own fundamental discoveries. Scientific balloons are put together by CSBF and evaluated with several tests that simulate the mission's conditions, such as extreme temperatures, high-speed winds and resistance. Then, the balloons are transported to a selected location among several options worldwide to finally be inflated and launched. The location varies depending on the mission's specific needs, with Sweden (at its arctic portion in the north), New Zealand or



Source: Hibbs Institute for Business and Economic Research.



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Antarctica as the most common launching places.⁶

CSBF is currently working on a sophisticated device (payload) that will launch from Antarctica in early December. This mission will be the longest-ever launch from this location. While the average number of days per mission is 22 and the longest is currently 54 days, this mission intends to be completed in 75 days. Interestingly, CSBF is fully prepared to take over any mission controlled and operated at the Johnson Space Center in Houston in case of an eventual emergency, such as a hurricane.⁷

It is great to have this kind of high-tech facility in East Texas. The activities completed by CSBF are of great value to NASA, the nation and the world. Additionally, it serves as an important economic driver to the region. Currently, CSBF employs 99 individuals, most of whom have an advanced degree and relevant experience in some high-tech field. Moreover, CSBF contracts with companies in the region to supply materials they need and fuels they use.⁸ The ripple effect of federal dollars spent in the region is considerable.

CSBF is one example of successful stories that need to be shared within our region. East Texas has so much to offer, and we need to stop being “the best-kept secret in the state.”

Finally, we would like to thank the CSBF administration for coordinating a great tour of their facility; Mr. Christophe Trahan, Executive Director of the Palestine Economic Development Corporation and his team for organizing the visit; and our dear friend Dan Bochsler for his passion, enthusiasm, and knowledge and for helping us discover this hidden gem in East Texas.

End Notes

¹ The Scientific Balloons, as part of the NASA's Scientific Balloon Program. <https://sites.wff.nasa.gov/code820/>

^{2,7&8} Information shared with us by CBSF crew members during our tour.

³ Space.com; Columbia Disaster: What happened and what NASA learned” by Daisy Dobrijevic and Elizabeth Howell; January 25, 2023. <https://www.space.com/19436-columbia-disaster.html>

⁴ The Columbia Scientific Balloon Facility (CSBF). Scientific Balloons. <https://www.csbfnasa.gov/balloons.html>

^{5&6} NASA Scientific Balloons fact sheet. https://www.nasa.gov/sites/default/files/atoms/files/nasa_scientific_balloon_fact_sheet.pdf

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Hibbs Brief: Visiting the Columbia Scientific Balloon Facility in Palestine, Texas (August 2023)