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The CSBF Mission, History, and Accomplishments

The CSBF has the following three-fold mission:

1. Plan and develop facilities and provide operations service to meet the approved ballooning requirements of the scientific community.
2. Perform the necessary research and development to meet future scientific ballooning requirements.
3. Provide consulting services in the field of scientific ballooning.

History:

The CSBF was established in Boulder, Colorado in 1961 under the auspices of the National Science Foundation. The facility was moved to Palestine, Texas in 1963 and designated as the National Scientific Balloon Facility in January 1973.

Starting in August 1973, a new launch area was constructed. A 1000-ft diameter paved circle for the launch vehicle with a 500-ft radius extension for balloon layout provided twice the useful area of the old pad and greater flexibility in balloon layout. The new launch area provided significant improvement in capability. First, two launch areas permit simultaneous launches and better utilization of good weather during periods of light stratospheric winds. Second, the greater area of the new launch pad enables launching of larger balloons.

In 1982, sponsorship of the NSBF was transferred from the National Science Foundation to the National Aeronautics and Space Administration ([NASA](#)), and the NSBF became a separate entity under the University Corporation for Atmospheric Research (UCAR).

In October 1987, the NASA contract to operate the NSBF was awarded to the [Physical Science Laboratory](#) under the auspices of [New Mexico State University](#) located in Las Cruces, New Mexico. The contract is administered by [Goddard Space Flight Center's](#) (GSFC) [Wallops Flight Facility](#).

On February 1, 2003, the [Space Shuttle Columbia](#) and crew were lost over the East Texas skies during re-entry into Earth's atmosphere. The 28th and final flight of Columbia (STS-107) was a 16-day mission dedicated to research in physical, life, and space sciences. In the months following the loss of Columbia, the Facility and surrounding community were instrumental in the debris recovery operations. On February 1, 2006, the National Scientific Balloon Facility was renamed the Columbia Scientific Balloon Facility as a reminder of what the Columbia's crew stood for: honor, bravery, and the quest for knowledge for generations to come. The official renaming ceremony was held at the Facility on February 23, 2006.

Accomplishments:

The Facility provides complete balloon operations services and engineering support to the United States and foreign scientific communities. The operations services include inflation, launching of the balloon, tracking and recovery of the payload, and telecommand and data retrieval with reliable electronics systems. Some of the areas of engineering support are design of balloon systems, research in balloon materials, electronics design, gondola design and thermal analysis. Also included are power system design, instrumentation design and integration, and recovery system design.

In over 25 years of operation, the Facility has launched more than 1700 balloons for 35 universities, 23 other research agencies, and 33 foreign groups. During this span of years there has been a dramatic increase in sophistication of experiments and demands for service. This can best be shown by comparisons of the growth in payload weight, balloon size, and the amount of electronic support provided between 1963 and 1988. The average payload increased from 407 pounds in 1964 to more than 3000 pounds in 1988. Average balloon volume has increased from 2.8 million cubic feet (MCF) in 1964 to over 20.0 MCF in 1988. Today, payloads weighing 5000 pounds are quite common and balloons of 20 to 30 MCF are flown routinely.

The CSBF has launched six ELBBO superpressure balloons (including the longest balloon flight in our history lasting over 4 months) for Professor Bob Holzworth of the Atmospheric Electrodynamics at the University of Washington.

Some types of research for which balloons are used are:

- Cosmic Ray studies
- Gamma Ray and X-Ray Astronomy
- Optical and Ultra-Violet Astronomy
- Infrared Astronomy
- Atmospheric Sciences
- Magnetospherics
- Micrometeorite Particles
- Cosmic Microwave Background Studies

In addition to the Palestine operation, the CSBF conducts scientific ballooning operations from various remote sites in the U.S. and several foreign countries. The Facility is recognized on the international level as being one of the most advanced organizations of its type in the world.

Countries the CSBF has flown experiments for:

- Australia
- Brazil
- Canada
- Denmark
- Germany
- Great Britain
- Italy
- Japan
- New Zealand
- Norway
- Russia
- Sweden

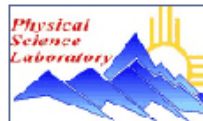
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