



Sitting on the Fence: Launching a Balloon in the Outback

On April 28, 2010, the Balloon Program suffered a mishap during the Australia campaign. As its first priority, the Wallops and Columbia Scientific Balloon Facility (CSBF) Balloon Program staff responded by supporting the investigation team at the launch site in Australia, and while back at Goddard. Program personnel provided all impounded equipment and data, and provided timely technical assistance and support needed by the Mishap Investigation Board (MIB).

In parallel with the MIB activities, in order to return balloons to flight when it was safe to do so, Wallops management (Balloon Program and Safety Office) conducted its own review of balloon management processes and systems that led to the mishap. The Wallop/CSBF team redesigned launch equipment and revised ground and flight safety plans in order to meet the next Antarctica campaign deployment schedule of late August, 2010.

The Wallops/CSBF team responded to the mishap by developing a more stringent fixed ground safety hazard area in which the balloon is laid out, and the launch vehicle is permitted to maneuver in order to conduct the balloon launch. Further, NASA flight safety developed a new down range hazard area to protect the safety of the public during balloon climb out (or in the case of an aborted launch), and also revised the ground and flight safety procedures used to conduct balloon launches. GSFC management instituted NASA mission management, as well as independent NASA Ground and Flight Safety roles to ensure that future balloon launches are conducted in compliance with safety plans.

Upon receipt of the MIB's report, the Balloon Program completed additional corrective actions, and conducted a Return To Flight review with GSFC and Agency leadership for all planned launch locations.

Supported by eight months of hard work by the people of GSFC determined to make the Balloon Program safer, the Balloon Program completed the investigation board's recommendations. By December, the GSFC Center Director was assured that the Balloon Program had completed corrective actions needed to protect the safety of the launch crew and the public, and granted approval for return to flight.

The NASA Balloon Program resumed balloon flights in December, 2010 from Antarctica, using NASA's newly developed safety plans. During the 2010 Antarctic campaign, the Balloon Program achieved a new milestone in scientific observations using balloons by launching five balloon flights within a single Antarctic summer. The Balloon Program returned to Australia in 2011. The High Energy Replicated Optics (HERO) payload was successfully launched on April 18 2011, and flew over 34 hours. The HERO payload is a Balloon-Borne Focusing Hard X-Ray Telescope designed to observe a relatively unexplored region of the x-ray waveband.



Figure 1 - Launch of the HERO Payload in Alice Springs, 2011