

Pre-Launch Hardware Turnover Requirement	Piggyback payload turnover will be required during the July prior to deployment to <u>Antarctica</u> for integration. Turnover must be completed at CSBF in Palestine, TX.
Post-Flight Hardware Turnover	For Antarctic missions payload recovery is based on termination location and conditions, and is typically several days post-landing, <u>but worse case can extend as long as 1-2 years.</u>
External Power Availability for Piggyback Payloads	Power equipment may require pressurization and/or active cooling. Researchers are encouraged to use built-in solar panels or batteries to provide their power requirements. Gondola and/or balloon provided power may be available and should be coordinated with the Columbia Scientific Balloon Facility (CSBF).
Duration Specifications	Researchers can state <i>a desired</i> flight duration; however, in the case of piggyback payloads, the duration will be determined by the primary payload. NOTE: Piggyback Payloads must be compatible with the gondola design.
Active Payload Operations	Any active payload operations, such as experimental initiation and/or activating a fixative, should be automated into the payload itself. Limited payload commanding may be available and should be coordinated with the gondola/balloon provider and/or the Columbia Scientific Balloon Facility (CSBF).
Interface Requirements	Any interfaces with the gondola or balloon should be coordinated with the Columbia Scientific Balloon Facility
Lab Facility Availability	Teams or members of teams flying piggy back payloads are usually not allowed to travel to Antarctica. Exceptions are very rare.
Temperature	McMurdo Station: Expect temperatures of 0°C and below (wind chill -6°C) during the Antarctic summer. Temperatures elevate with balloon altitude.
Maximum Balloon Altitude	33 – 50 km
Radiation Type: Broad energy spectrum of various particles.	Maximum Intensity occurs within the range of 100-1000 MeV/nucleon
Radiation Dose: Varies greatly due to solar particle events and increases with altitude.	Estimated Basal Dose Equivalent Rate: 20-30 μSv/h