



Eclipse Ballooning Project Dry Run Plan

AS of May 3rd, 2017

Introduction

Purpose: The purpose of the full-scale dry run and lead-up tests is to 1) bring to light as many organizational and technical issues as possible so that those issues can be addressed in the weeks between the dry run and eclipse day, 2) test loads on whole project systems, 3) practice communication with the FAA, and 4) practice, with NASA watching, piping balloon-borne live streams to the public website and NASA.gov.

Intention: The intent is for teams to complete as full of a dry run as possible without taking on too much risk. For example, if a team intends to conduct a full practice flight on 6/20 but the weather and flight prediction indicate that their payloads might land in an irretrievable location, the team might consider a tethered flight instead.

Safety: As always, teams must take the time to consider the safety of their internal team members and external factors such as FAA communication.

Changes: We will ask teams to make a small number updates to existing software prior to and potentially after the dry run. This includes updates to enable streaming live video to NASA.gov and updates to the ground station software. Changes will be kept as minimal as possible and will be shared with as much clarity as possible.

Plan Timeline and Milestones

- 4/1: Project Milestones 1-12 (except 3) are complete.
- 4/19, 10 AM MDT: Telecom to introduce the update necessary to stream live video to StreamEclipse.live (and therefore NASA.gov and NASA TV).
- 5/5: Deadline for dry run launch sites spreadsheet to be filled out and returned.
- Continuous: Software and instructions will be available for payload/ground station/system updates as testing progresses.
- Mid-May: Software and instructions will be available for StreamEclipse.live software update.
- 5/30, 11AM MDT: Full Iridium test with website and ground station tracking (Project Milestone 3).
- 6/13: Full system 'bench' test (with necessary payloads, etc. outside) (Project Milestone 13)
- 6/19 at your eclipse time: full 'bench' test (with necessary payloads, etc. outside). This test will include NASA technical and media personnel.
- 6/20 at your eclipse time: **full dry run** (Project Milestone 15). This test will include NASA technical and media personnel.
- 6/21: NASA dry run; a few teams (esp. leadership teams so they remain available to assist teams on 6/20) will conduct their dry run flights. If the 6/19 and 6/20 tests go well with NASA, these flights' live streams will be part of a national press conference and available to the public on NASA.gov.

- 6/27: Dry run report due. Report should succinctly list what went well, what issues were encountered, and what steps need to be taken prior to eclipse day.
- 6/28 – 8/11: additional dry run events will be scheduled.

Dry Run Elements

Full dry run testing should include as many of the elements below as possible. Other practice events might include only a subset of these.

- Total payload and parachute weight measured
- Flight track prediction run
- Ground station set up and calibrated
- Iridium modem on and reporting packets
- Video streaming to StreamEclipse.Live
- Payload string together
- Balloon filled and payload string attached
- Balloon launched and flight tracked via Iridium
- Iridium command to cutdown