



Eclipse Activity Report (EAR)

Nationwide Eclipse Ballooning Project

Issue #8
11/17/2016

<http://eclipse.montana.edu>

EAR Issue 8 Summary

This and all previous issues of EAR can be found at:
<http://eclipse.montana.edu/news/>

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Next Telecom 12/08/2016 at 11AM MDT. We will spend about 20 minutes on updates then open the floor for questions.

- Call toll free 855-797-9485
- Pass code 921-692-445# then # again

Action Items

- **Please remember to report your ground station/launch location via the Milestones Checklist (reporting version)**
- **Send Shane your team website or blog to be added to the eclipse ballooning page**
- **Invite students to join the Eclipse Ballooning Project Student Communications Google Group here:**
<https://groups.google.com/forum/?hl=en#!forum/sgebpsc>
- **Next Telecom 12/8/2016 at 11AM MST!**

General Updates

T-Minus

As of this writing we are 39 weeks, 3 days, 20hrs, 41 minutes and 49 seconds away from the moons shadow reaching Oregon's coast as the Great American Eclipse begins. To better put that into perspective November 21st, 2016 puts us 9 months away from the day of the eclipse and just under 7 months away from the dry run. We have 7 months to become experts with our equipment and prepare to be in the national spotlight.

Air Traffic on Eclipse Day

It becoming increasingly clear that air traffic along the eclipse path will be busy. Very busy. So busy in fact, that NASA is unsure if their plan of the NASA Administrator flying over the eclipse path while streaming footage is a possibility and that they may be grounded. It is therefore important that we consider our impact within and around the eclipse airspace and remember that we are not only representing the Eclipse Ballooning Project, but the high altitude ballooning community and NASA.

It is best to assume that the FAA will be overwhelmed leading up to and on the eclipse day; filing NOTAMs by individual teams to centers around the country will be unpractical leading up to the eclipse. To be as proactive as possible we are currently working with the FAA in creating maps of projected airspace we expect to impact, preparing NOTAMs for every team's projected launch and landing location, and preparing the project tracking website to give the FAA near real time updates of our ballooning activity during the eclipse.

This is not required of us under the FAR 101. By making safety and our consideration of being good stewards a priority as representatives of ballooning programs around the country, the Eclipse Ballooning Project and NASA, we are taking these steps in preparation for the day of the eclipse. But we, the leadership team, cannot do this alone; we need your help...

Ground Station/Launch Locations

We have received launch/ground station locations from just over two-thirds of the participating teams. That means around 15 teams still need to report their launch/ground station locations. Our goal was to have all launch/ground station locations reported by November 4th so we can meet our December 1st deadline of sharing these locations with the FAA.

Looking beyond the scope of reporting to the FAA, teams in need of traveling to their locations within the eclipse path who have not locked in their location yet will find opportunities begin to slip away. Hotels, campsites and other amenities are becoming increasingly more expensive and availabilities are dwindling. For teams who want to live stream their feeds during the eclipse must take other considerations into account: Hotspots can't be relied upon in areas with large crowds. Hardline connections are ideal, but you may need to provide a wireless modem if your ground station is over 100ft away from the source. Launch and ground station locations may differ if your burst point is over 25 miles away.

If you need predictions based on historical data from your launch location, we are happy to help. We can run predictions for you (based on a 1000 ft/min rise rate) back 10 years and supply the information to your team.

The time is now to solidify these details. If you have not already done so, please send Shane your launch/ground station locations or any updates to your locations.

NASA/Project Safety Document

We are currently working on a project specific safety document about safety expectations for the project. Because this is a NASA sponsored project they have invested interest that we have a safe and productive launch on eclipse day. This safety sheet, like the Helium Transportation guide, will be available for teams to share with their institutions.

Iridium Dropped Packets – We Need Your Help

Some teams are experiencing irregularities in Iridium reporting. For example, Montana Space Grant recently launched two balloons both with an Iridium tracking modem with interesting results. One balloon flown with the “standard payloads,” (RFD still image, Ubiquity video streaming, Iridium configuration from workshop and cutdown) had spotty Iridium reporting; sections with gaps in reporting up to 10 minutes. The other balloon string included the tracking payload with an old Iridium configuration (older Iridium modem with one patch antenna which includes the GPS) and a “random payload” (housing a camera, post cards and a few other “trinkets”) and had very good reporting results with few dropped packets.

Looking back on archived data we have seen teams fly with great results (few dropped packets) and with mixed results (dropped packets with reporting delays of sometimes 10 minutes).

As the Montana BOREALIS team continues to test different configurations to better understand these irregularities, **we need your help!** If you fly the Iridium tracking modem and experience good or spotty results, please send a short report to Shane with as many details as possible. An example of details that could prove useful are as follows: What payloads were flown and what was the order of the payload string? What other wireless transmitting payloads (outside of the “standard workshop payloads”) were included? What payload packaging did you use to house the tracking system (i.e. did you use the payload packaging from workshop or custom)? How was the Iridium tracking system configured within the payload (was the payload flown in the configuration as presented during workshop, or did you change placement of antennas, etc.)? Any other details you think could prove useful such as diagrams, photos or descriptions would be greatly appreciated as we explore these mixed results.

Telecoms

Please refrain from asking technical questions during the monthly telecoms. Wizards are not always available during those times and we would like to keep the discussion to project specific or logistical questions. Technical telecoms can be made available when a congregation of Wizards can be made accessible to best tackle technical questions. We have new Wizards available to address questions on the Proboards forum, so please take advantage of that.

Stre.am and Stre.am Accounts

Set up a Stre.am account for your team with the format: **state_teamname_registration#** at <https://stre.am/>

Please email Shane your account name so it can be added to the stre.am/eclipse admin access.

We are working on a set of instructions on how to stream to Ste.am without the need of VLC. You can begin streaming through Stre.am now during tests and we would greatly appreciate any feedback you have of your experiences.

Milestone 3

Milestone 3, set for 11/11/2016, has been postponed until further notice. The server has been moved and we are ironing out some final glitches. We are getting close!

Milestone Spreadsheet

Please continue to update your spreadsheet (reporting version) and send it in as you complete Milestones. As your confidence in the systems change, please reflect that within your update.

Team Activity

What's Up?

Is your team doing something interesting you would like to share? Tell us what you are up to! Please send Shane any details, photos, diagrams, etc. of any activity you would like to share and we will feature it here!

- We're putting together a **social media** team. Anyone interested in helping, please contact Shane or Angela.
- Facebook page: <https://www.facebook.com/EclipseHighAltitudeBallooning/>
- Twitter: https://twitter.com/Eclipse_HAB

Technical Activity

ProBoards

<http://eclipsedesign.proboards.com/>

We have recently added additional "wizards" from University of Colorado to monitor the forum and help respond to technical questions. Keep posting questions and any feedback you have to current posts.

GitHub

<https://github.com/MSU-BOREALIS>

Students – get involved in tinkering with the software!

New FAQs

See answers at <http://eclipse.montana.edu/faq/>

- How should I pick my ground station location and how do I set up the ground station downrange?

Communication

- Points of Contact for eclipse path state hosts can be found from the FAQ page.
- The next group **telecom** will be Thursday December 8th at 11 AM Mountain daylight time. At the telecoms, we will spend about 20 minutes on updates then open the floor for questions.
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- Telecom 12/8/16, 11 AM Mountain Standard Time