



Eclipse Activity Report (EAR)

Nationwide Eclipse Ballooning Project

Issue #14

3/24/2017

<http://eclipse.montana.edu>

EAR Issue 14 Summary

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

General Updates

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Communication

Eclipse Group Telecom 3/30/2017 at 11AM MDT.

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

Technical Telecom 4/6/2017 at 10:45am MDT

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

Stream Webinar on Updated Video Code 4/19/2017 at 10am - Noon MDT

- Call-in/viewing details TBD.
- Webinar will be recorded

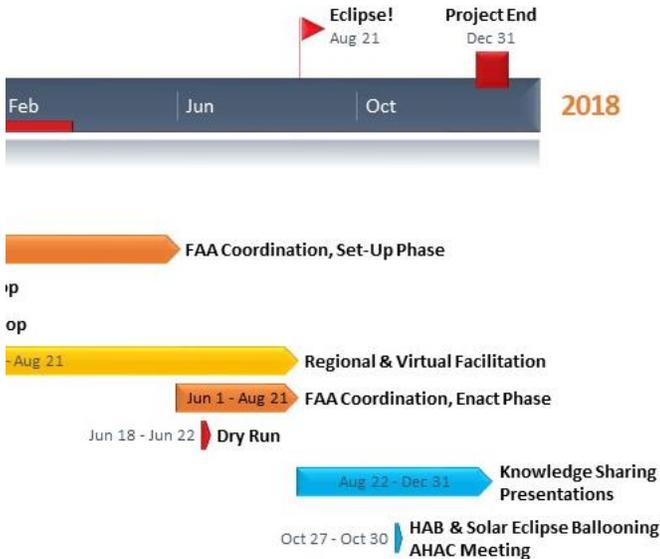
Action Items

- **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 3/30/2017 at 11AM MDT**
- **Technical Telecom 4/6/2017 at 10:45AM MDT**
- **STREAM Webinar 4/19/2017**
- **Consider sharing the donation opportunity with potential donors!**

General Updates

T-minus

As of this writing, we are 21 weeks, 3 days, 21 hours, 33 minutes and 24 seconds away from the Moon’s shadow reaching Oregon’s coast as the Great American Eclipse begins.

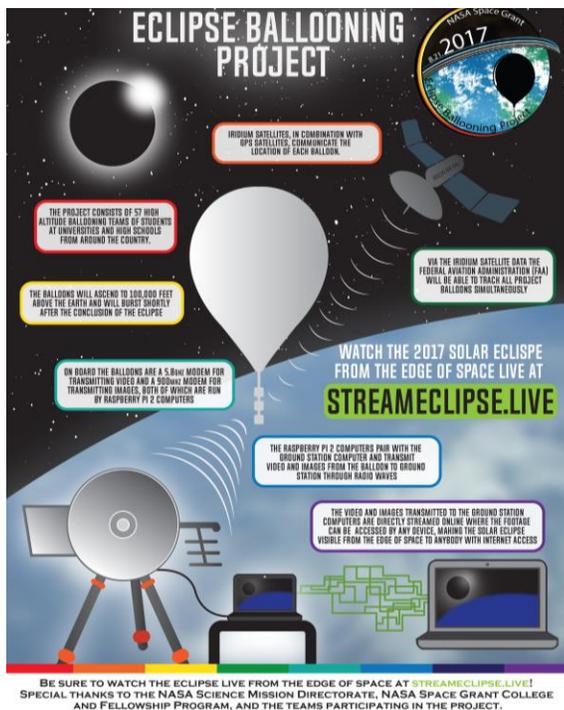


Stream Update

The EBP streaming website address is **streameclipse.live** and is now in development! Stream is also optimizing the video system codes for better streaming quality and consistency. **All teams must make this very important change if they want to participate in the NASA.gov and NASA TV footage.** The new video system code and instructions for preparing your systems will be shared with teams by April 12th, 2017. The following week Stream will host a Webinar on April 19th, 2017 to give a 1 hour presentation and answer any questions that have arisen while teams began using the new codes.

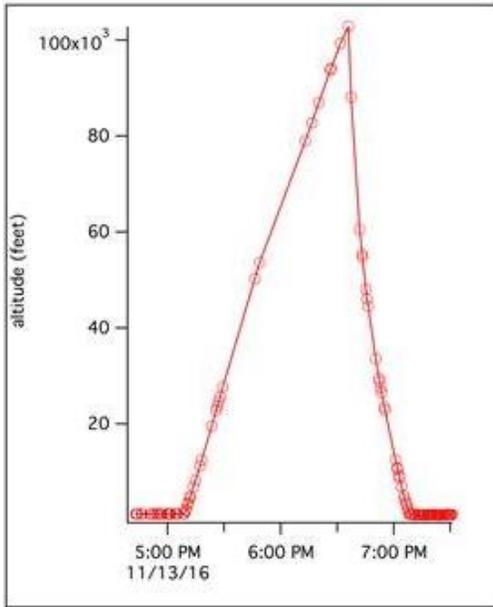
Two variants of the code will be made available. One “turn key” style code to automate your live stream directly to the website, steameclipse.live, and an “open source” version, which automates the live stream to the website while allowing teams tinker with the code.

EBP Infographic



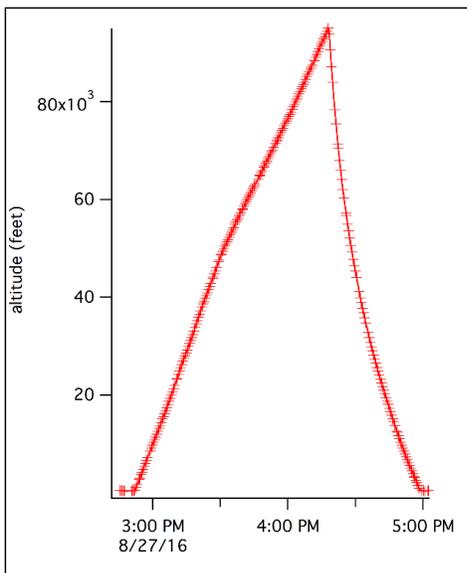
Improving Ground station Tracking: Future Upgrades

As a few teams have become well aware, tracking via the tracking payload has had some inconsistencies. Below you will find graph of a flight demonstrating the inconsistencies seen by some teams:



****Reporting efficiency 54 of 240****

On the other hand, we have had teams who have had great success tracking their payloads via the tracking payload:



****Reporting efficiency 254 of 260****

We have been in touch with NAL about these inconsistencies and have come up with a number of possible/hopeful solutions:

1. Lower your reporting rate to 1-2 minutes
2. Recently launched Iridium satellites adding to the constellation may activate this summer improving results.

Obviously both of these possibilities are not ideal as option one could inhibit tracking/streaming performance depending on the ground station location (especially shortly after launch) and option two is completely out of our hands whether or not those satellites become active before the eclipse. Thankfully, the UofMinn support team are working on a third option:

3. A system upgrade to hardware/software of the RFD (still image) payload and software of the ground station allowing near continuous position reports to the ground station.

Option three add around \$60 worth of hardware and new software (namely a GPS module) to the RFD payload which then uses the 900Mhz modem to transmit the position reports to the ground station. To make this solution even better, this update does NOT interfere with any RFD commands being sent to, or images being transmitted by, the RFD payload. This option does require new software image to the RFD SD Pi card and an updated variant of the RFD ground station code. The ground station will then take the most recent position point, whether that be from the Iridium tracking payload or the RFD payload GPS, to point the antennas.

The Minnesota team is still finalizing this option by testing out the implementation of these changes on a few guinea pig teams. If all goes well, formal instructions will be written up and made available for teams to make the upgrade to their own systems. All hardware and shipping will be covered by EBP funds. Please note, we do not currently have a timetable on the release of this upgrade, but we will make it available as quickly as possible.

Preparing for the Summer

As the end of the semester approaches, it is important to start considering how your team will prepare for the

dry run and the eclipse during the summer break. Where will team members be? Will you continue to test, practice and refine your systems? If team members are going away for long periods of time, how will your team regroup without losing the knowledge you have gained? If you are going to recruit new team members, how will you get them up to speed? If you have team members leaving or graduating, how can you pass along their expertise to upcoming team members? We have made a lot of progress in the months since the 2016 workshops and it is important that we do not lose the momentum we have gained, but kick it into top gear as we head into the summer break.

EBP Press Packet

A "press package" is in production thanks to the Program Manager of Louisiana Space Grant, Colleen Fava. As the project drifts more into the media spotlight it is important that talking points be addressed consistently as the media reaches out to individual teams around the country. This packet will help your team answer questions while allowing for a unified vision of the project and its goals as a collaborative effort. More to come soon.

AHAC 2017 – HAB & Solar-Eclipse Ballooning

8th Annual Academic High-Altitude Conference
AHAC 2017
HAB & Solar-Eclipse Ballooning
 Minneapolis, Oct. 27 - 28, 2017

Hosted by the Minnesota Space Grant
 at the University of Minnesota – Twin Cities

Conference Sponsors:

- Stratospheric Ballooning Association (SBA)
- NASA's Space Grant Consortia, especially the Montana Space Grant

Conference schedule with keynote speakers, registration details, and abstract deadlines coming soon! We anticipate two full days of presentations - Fri. & Sat., Oct 27 – 28, 2017-

For more information:
www.stratoballooning.org/conference

Conference contact:
 James Flaten, MN Space Grant / U of MN
flate001@umn.edu

The University of Minnesota - Twin Cities (Minneapolis campus) will be hosting a post-eclipse 2-day ballooning conference called "AHAC 2017" on Oct. 27-28, 2017 - a Friday and Saturday. This conference will be an

opportunity to share your results from the eclipse ballooning project and to hear about the experiences of many other teams. We hope all ballooning teams, including those who have things to report unrelated to the eclipse, seriously considers sending participants and giving oral and/or poster presentations at this conference. We may collect footage for a nation-wide eclipse-ballooning video montage as well! The Stratospheric Ballooning Association (SBA), which runs the annual AHAC (Academic High-Altitude Conference), will be involved with multiple Space Grants in organizing this conference and publishing conference papers online.

The conference is open to anyone but is especially intended for balloonists (both college-level and others) involved in eclipse ballooning in 2017. Teams from the Space Grant "common payload" (video telemetry) ballooning initiative, the radiosonde project, and the SBA will all be invited, as will other academic and amateur balloonists from around the country. Unlike past AHAC meetings, this conference will not include pre-conference workshop days and will not offer instructional sessions to those new to ballooning. These activities will probably return in later AHAC meetings.

We anticipate the registration cost for this conference will be about \$200 for faculty/adults and \$100 for students. This cost will include lunch on both days and an evening "banquet" meal on Friday evening. Minneapolis is easy to reach by air and the conference venue (the Minneapolis campus of the University of Minnesota) and the conference hotel(s) are all easy to reach by inexpensive public transit (light rail) from the airport, so you won't need a rental car. The main conference hotel will charge about \$100 a night for 2-bed rooms that can sleep up to 4 people and provides breakfast and free parking (if you happen to have a car).

Please have **one representative** from your team fill in the survey here:

https://umn.qualtrics.com/SE/?SID=SV_dgtJUqXoTVSPgQt This *non-binding* survey will help us estimate the number of people who might attend this conference so

we can plan accordingly. Note: Please complete at least the first two questions even if you are not sure whether or not your team will be sending attendees so that we can ensure your team receives future conference announcements by e-mail. **Please complete this survey no later than 03/31/2017.**

Server Update/Calendar

The server is being worked on may need to go down for short periods. To avoid any conflicts with tests or flights teams may be conducting, please continue to update the calendar spreadsheet or contact Shane about any upcoming flights or tests involving the Iridium tracking or the website.

<http://eclipse.montana.edu/ebp-calendar/>

EBP Team Solar Viewing Glasses

Each workshop-registered teams will be receiving a bundle of about 600 solar viewing glasses to be shared at your launch event and/or with your local community.

Team Activity

Temple University Flyers

Check out the video of the camera pointing system the Temple University Flyers have implemented! It uses the Pi camera to detect and track bright light sources.

<https://drive.google.com/open?id=0B1EO2oFfeaJVWHhXZGZiWXd4NUE>



What's Up?

Is your team doing something unique, or something you would like to share with the EBP community? Share it in the EARs or the student Google Group forum! Feel free to send Shane any team activity you would like to share.

Technical Activity

ProBoards

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

New troubleshooting tips/solutions and ideas are being shared on a near daily basis. Check out the discussions!

GitHub

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

New FAQs

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

Communication

- The next group **telecom** will be Thursday March 30th at 11 AM mountain daylight time. At the telecoms, 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
- A technical Telecom will be held Thursday April 6th at 10:45 AM MDT.
 - Call toll free 855-797-9485
 - Pass code 921-692-445# then # again
- Facebook page:

<https://www.facebook.com/EclipseHighAltitudeBallooning/>
- Twitter:

https://twitter.com/Eclipse_HAB

Action items

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