



Eclipse Activity Report (EAR)

Nationwide Eclipse Ballooning Project

Issue #13
2/28/2017

<http://eclipse.montana.edu>

EAR Issue 13 Summary

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

General Updates

T-minus

AHAC 2017 – HAB & Solar-Eclipse Ballooning

Individual Team Calls

HAB FAA Questionnaire **(Please complete by 3/15)**

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New FAQs

Communication

Next Telecom 3/30/2017 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

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

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

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**
- **Consider sharing the donation opportunity with potential donors!**

General Updates

T-minus

As of this writing, we are 24 weeks, 5 days, 22 hours, 57 minutes and 13 seconds away from the moon's shadow reaching Oregon's coast as the Great American Eclipse begins. That is less than 6 months away!

AHAC 2017 – HAB & Solar-Eclipse Ballooning

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.**

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

Individual Team Calls

If you did not schedule an individual team telecom, and would still like to do so, please contact Shane directly (shane.mayergawlik@montana.edu). We are also

considering offering individual telecoms in June if teams find that useful.

Ballooning Community FAA Questionnaire

It is important that our ballooning groups be adequately represented within the balloon operations database that is being compiled. Thanks for your support on our previous request. Responses from 76 balloon programs were received. As a result, the committee recognizes the need to gather more information on your programs and the potential impact that new regulations might have. For example, most of the large balloon operators (NASA, WorldView, Google) already employ avionic transponders as part their payloads. There is considerable support for requiring transponders as they provide the highest level of situational awareness and most naturally integrate within the existing ATC systems. However, at what cost? How would a transponder requirement impact your program? We understand that the cost, weight and power requirements are all unknowns and the magnitude of these variables will have a significant impact on your operations. Use your best judgment on this and the other mitigation and compliance measures addressed in the questionnaire. The rule making process requires a cost analysis, but the analysis can only use the data that is collected via this voluntary questionnaire. Please make time for this activity, your participation in this questionnaire is important regardless of the size of your program.

Your responses are required no later than March 15, 2017. You can submit your completed questionnaire electronically via email to sahmed@mitre.org or by FAX it 703-903-1491. If you send you response via FAX please include "ATTN: SABIN AHMED, LEAD ECONOMIST" at the top of the document.

For assistance or clarification, you can direct your questions to either Sabin Ahmed at Mitre Corporation

sahmed@mitre.org or myself, Berk Knighton, at bknighton@chemistry.montana.edu.

Your time and effort in these matters in very much appreciated. Please feel free to contact me with your concerns or comments. We all benefit by the drafting of regulations that promote safe and equitable use of our national air space.

The questionnaire will be included as an attachment in the EAR13 email.

Eclipse Megamovie Project

From Brian Kruse: We're excited to announce an opportunity to contribute to a first-of-its-kind citizen science project: the [Eclipse Megamovie](#)! We're looking to get photographs of the upcoming August 21st total solar eclipse to build a movie of images from coast to coast. We need skilled photographers to help create the movie as well as support solar science. For more on the goals of the project, see [UC Berkeley's official press release](#).

Our aim is to recruit over 1,000 amateur photographers and astronomers who will be on the path of totality on August 21, 2017. Team members receive training and submit a practice image before the eclipse. Once you qualify, you will receive a pin to designate your status as an official photographer for the project. Your name will also be included in the credits of the final Eclipse Megamovie. If you want to participate, [visit our website](#) and **SIGN IN** to apply!

Basic equipment necessary for participating in the Eclipse Megamovie Project

- Camera: DSLR (digital single lens reflex)
- Telephoto or zoom lens: minimum focal length of 300mm
- A stable and level tripod
- Ability to identify the GPS coordinates and time to the nearest second

Meet with us in DC

Angela, Jen (leading the Radiosonde Project), Randy, Trevor (workshop wizard) and Shane from the Montana leadership team will all be at the National Space Grant yearly meeting in DC. This may be our last chance to

meet with anyone in person before the August 21st eclipse so please take advantage of meeting with us during this time.

Reaching the Public through our Local Libraries

A project to provide eclipse glasses and information through public libraries (with support from the Moore Foundation and Google), it is being organized through the Space Science Institute's STARNet library network (which has received strong support from NASA): <http://www.starnetlibraries.org/2017eclipse/>

There are resources to provide over 2,000 public libraries with packages of glasses and information. Other libraries can order glasses at bulk discounts for themselves and the information booklet will be available to download from the Web. We hope that many astronomers, astronomy educators, and amateurs will offer to support their local library by volunteering for programs there in the months and weeks before the eclipse.

A map showing which libraries are participating will be updated regularly on the STARNet website, but there is nothing to stop you from telling your library about the eclipse and the opportunity to apply for glasses, and volunteering to help in any case.

Carolina Eclipse Videos

Hot off production are the multimedia blips for the Carolina Eclipse Initiative Project. These shorts (about 3 minutes each) cover 4 topics noted below. The Morehead Planetarium production team focused on our states, but did so in a generic fashion so that these could be shown anywhere. Please broadcast as appropriate - they're still quasi-hidden on our youtube page, though. The main reason for that is we want to give our partners and media members first access. Sounds like UNC-TV is already interested in using them, which is cool.

What is a Solar Eclipse?

<https://youtu.be/ZAm0mEOJ8ns>

Where and When?

<https://youtu.be/Co8mY9XLP1I>

How to View the Solar Eclipse

<https://youtu.be/-wWcXLT9ZhE>

Past, Present, and Future

<https://youtu.be/X5u3RwnJ1jY>

Evaluating the Eclipse Ballooning Project

An external professional has been hired to help with the evaluation process for the EBP as a whole and on an individual group basis by developing evaluations tools, which will be made available to teams. More information will be made available soon.

Team Activity

LSU Launch

Below is a picture of the ground station setup that we used last Wednesday. The new dish is a 1.05 meter Ubiquiti RocketDish RD-5G34 antenna. The antenna driver is a Yaesu G-5500 elevation / azimuth antenna rotator. The tripod is from a 12" Meade LX200GPS telescope system. We bought the dish new, but the rotator and tripod I had around from older projects.



While we are still in "It's a learning experience" mode, then antenna system and control software appeared to work well. Most of our trouble was with the BNO055

absolute orientation sensor, which was frequently losing calibration.



Technical Activity

Eclipse Streaming Site in the Works

Stream.live will have the month of March to begin developing and building the official project streaming website (**streameclipse.live**)! Among that, they are also fine tuning the video payload Pi code for better streaming capabilities. More news soon!

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/>

- I purchased a new maestro board and now the motors on the ground station don't work, what are the Maestro settings?

- Cutdown initiated expectantly. Why did cutdown initiate without the cutdown command being sent?
- Where can I listen to previous technical telecoms?

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.
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- A technical Telecom will be held Thursday April 6th at 10:45 AM MDT.
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- Facebook page: <https://www.facebook.com/EclipseHighAltitudeBallooning/>
- Twitter: https://twitter.com/Eclipse_HAB

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>
- Telecom 3/30/17, 11 AM Mountain Daylight Time
- Technical Telecom 4/6/2017, 10:45am MDT
- Consider sharing the donation opportunity with potential donors!