BalloonSat Flight 34 Report
Launch: Tuesday, August 19, 2014 7:10 PM, Greenway, UAH
34.7245N, 86.6399W
Recovery: 34.69989N, 86.3508W

OVERVIEW:

BalloonSat 34 was a success! The launch during the finale of the convocation went smoothly. The box of dreams was carried to 86,622 ft. Our primary (APRS) tracker (Byonics Micro-Trak AIO HA, K4UAH-12) performed well, and the recovery team recovered all payloads at a farm in Paint Rock, AL. The payloads landed 5 ft. from a pond at a chicken farm.

For announcements of future BalloonSat flights, and information on past flights and equipment, visit the UAH Space Hardware Club’s BalloonSat webpage at space.uah.edu/balloonsat. The Space Hardware Club would like to thank the SGA for funding the mission and working with the Space Hardware Club to coordinate a balloon mission. The Space Hardware Club looks forward to working with the SGA in the future.

Payload Manifest:

- Box of Dreams
- Tracker Box Payloads
  - Bionics APRS tracker. APRS GPS Beacon K4UAH-12
  - Spot GPS online tracker space.uah.edu/balloontracking
  - High Altitude Blinking Unit 3
- GoPro Video Payload
- Cell Phone Payload
- Class of 2018 Banner

The payloads and parachute had a total mass of 8.5 lbs.

LAUNCH:

The launch went off very successfully; there were no problems with the launch at all! Around 400 people attended the convocation in the audience and 18 team members participated.
FLIGHT:

The flight went quite well; however, the High Altitude Blinking Unit 3’s battery was unsalvageable post flight. It was blinking when it reached the ground as evidenced by the video from the GoPro payload, but was unchargeable post recovery. It is suspected that the low pressure expanded the battery then as the payload descended the battery contracted and was damaged. Another notable thing about the flight was that the banner acted as a drag device and slowed the descent rate significantly, which kept the payloads away from the mountainous terrain further to the east.

RECOVERY:

The recovery happened the following morning of the flight. The final coordinates were found by the SPOT Tracker and pinpointed to be at 34.69989, -86.3508. Those coordinates appeared to put it in a pond by a chicken farm. The landowner contacted us at around 7:30 am the morning following the flight. The recovery team left at 9:30 am and recovered the payloads around 10:15 am. The payloads were brought up to us and we were told that they landed 5 ft. away from the chicken waste pond. That was a close call!
PAYLOADS:

K4UAH-12 Tracker:

The Byonics tracker operated correctly. The mobile ground station received the majority of the packets.

SPOT Tracker:

The SPOT Messenger operated nominally.

Box of Dreams:

The Box of Dreams was successfully recovered.

GoPro Payload

The GoPro Payload operated correctly and stayed on for the duration of the flight.

Cell Phone Payload

The Cell Phone Payload was fully developed by Ali Butt and used a custom application that read all of the sensors on the phone (Accelerometer, Magnetic Field, Gravity, Pressure, Battery Status, and GPS Position) and saved to an external SD card. The payload was duct taped to the side of the GoPro payload and recorded data on the motion and position of the payload box and data for the status of the phone. The data is linked to here:

High Altitude Blinking Unit 3

The HABU 3 included 6 475 lumen LEDs. The HABU 3 performed nominally apart from the post flight battery failure.

Class of 2018 Banner

The Class of 2018 Banner was designed by Jordan Teats. The banner was signed by students and Dr. Altenkirch. The Class of 2018 Banner was recovered successfully but was slightly damaged; however, the damage did give it character.