

Up, Up and Away-CRAP!

Two Balloons' Journeys to the Edge of Space

Cassandra Brown, Maura Cosman,
Ambika Goel, and Carly Ingrao
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Objective The goal of this experiment was to build a weather balloon, equipped with temperature and pressure sensors, as well as a timelapse camera and GPS, and send it into the Earth's atmosphere, approximately 80,000 feet above sea-level.

Circuit Design

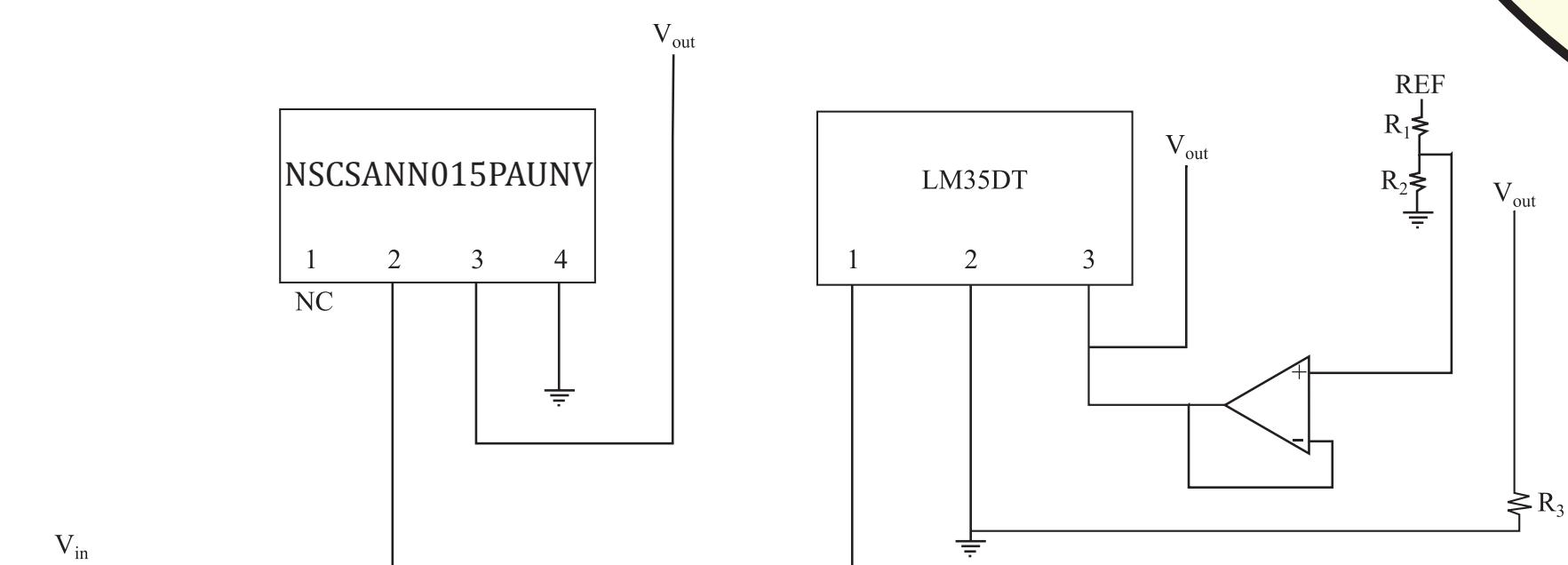


Figure 1: Temperature and pressure sensor schematic

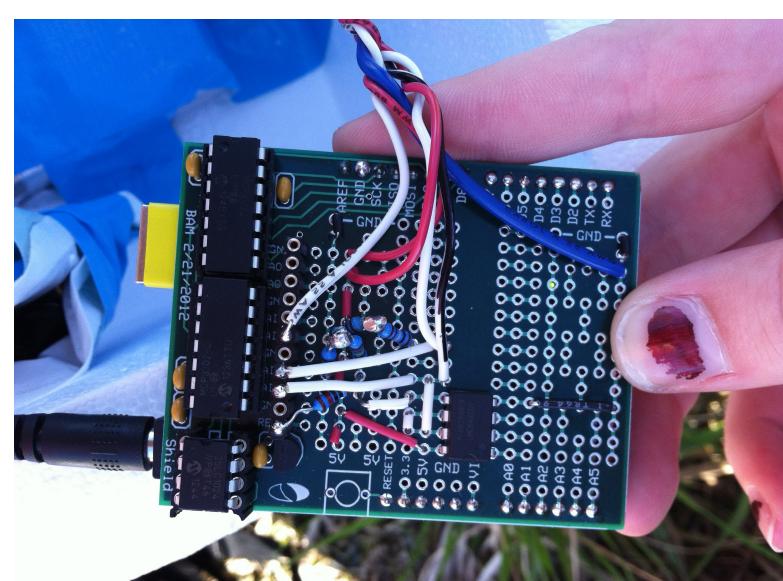
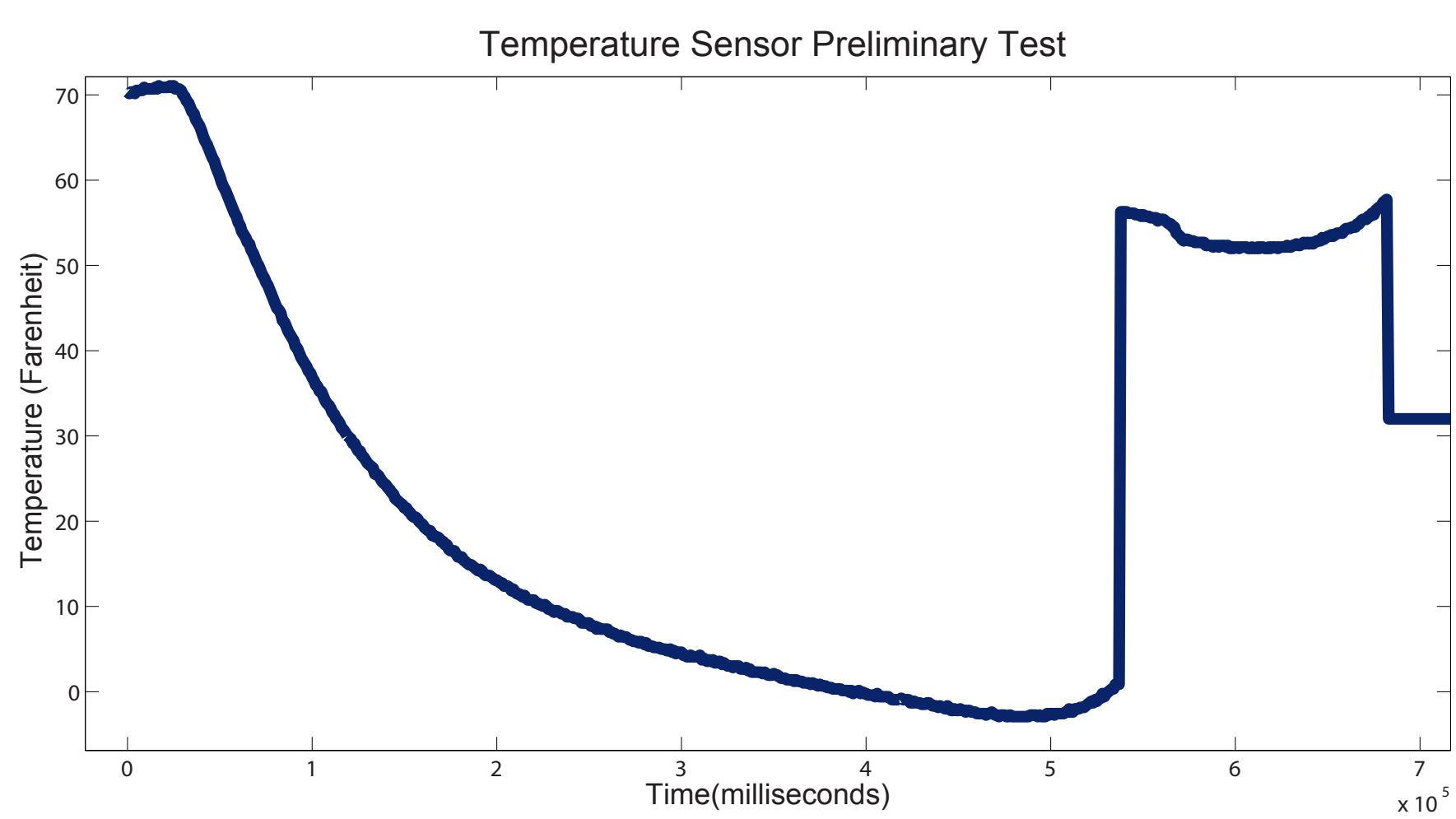
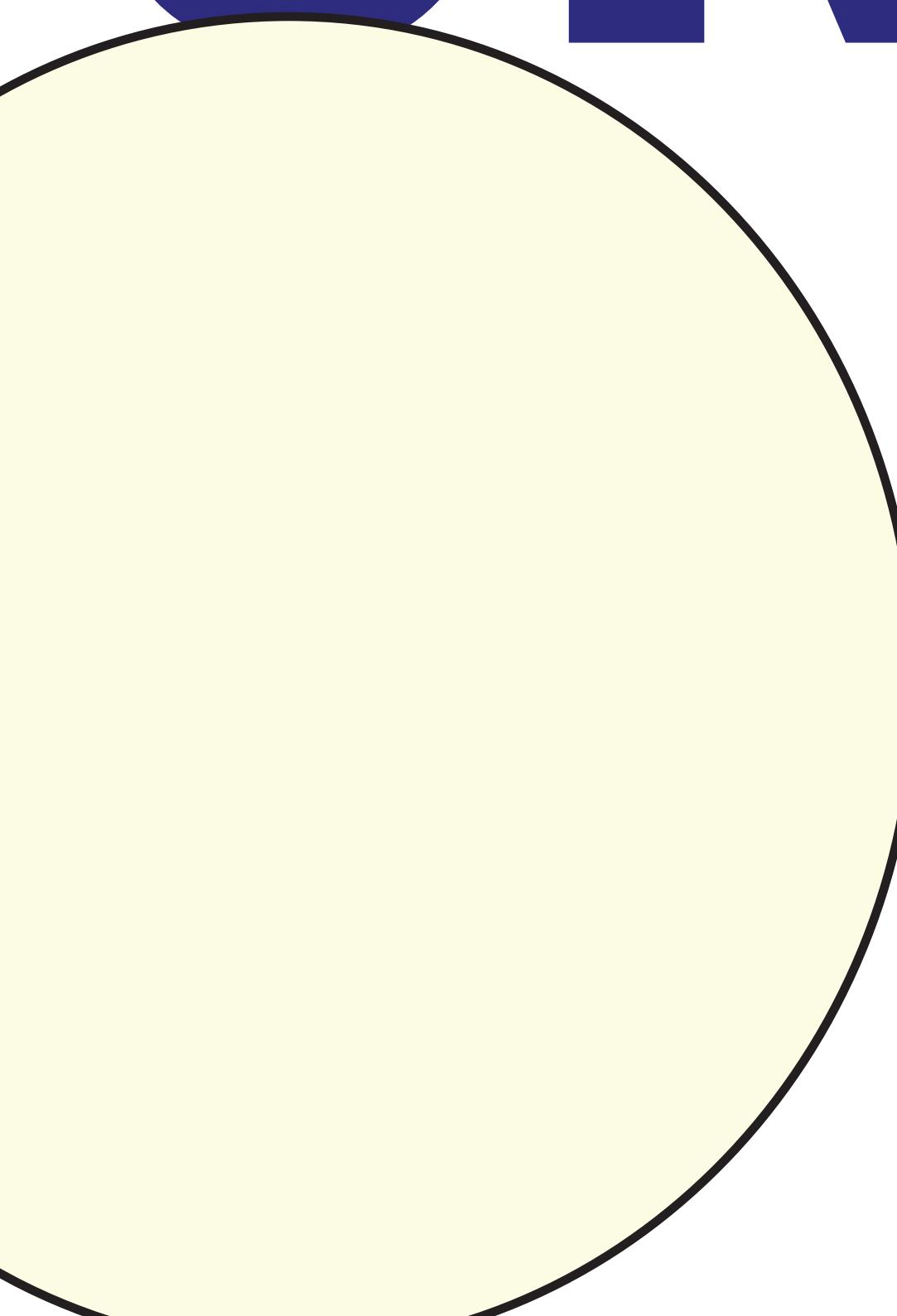
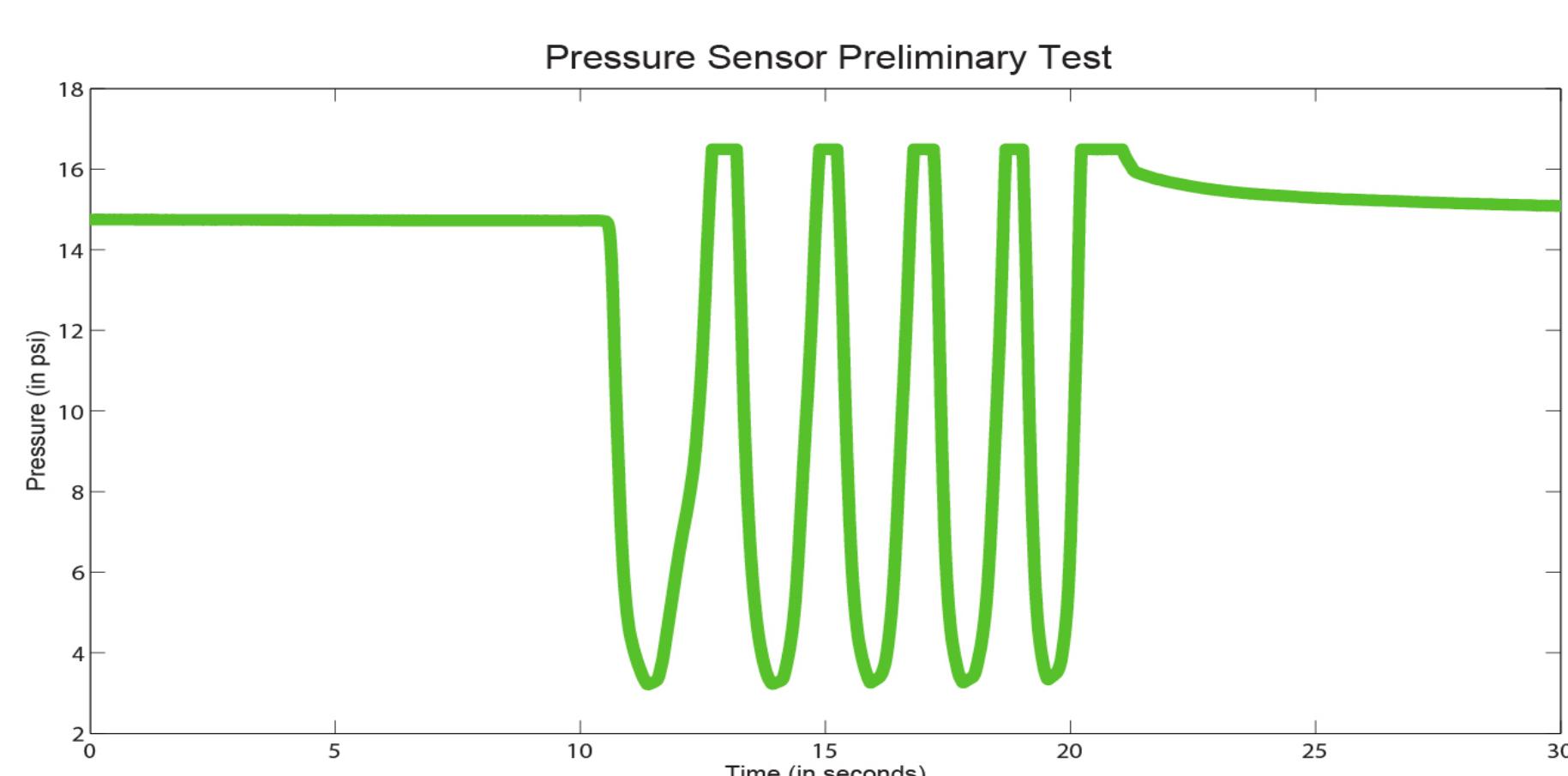


Figure 2: Final circuit with LM35DT temperature sensor, NSCSANN015PAUNV humidity sensor, and Arduino

Preliminary Testing



Figures 4 and 5: Above and below, the temperature and pressure sensor preliminary test results



Payload Design

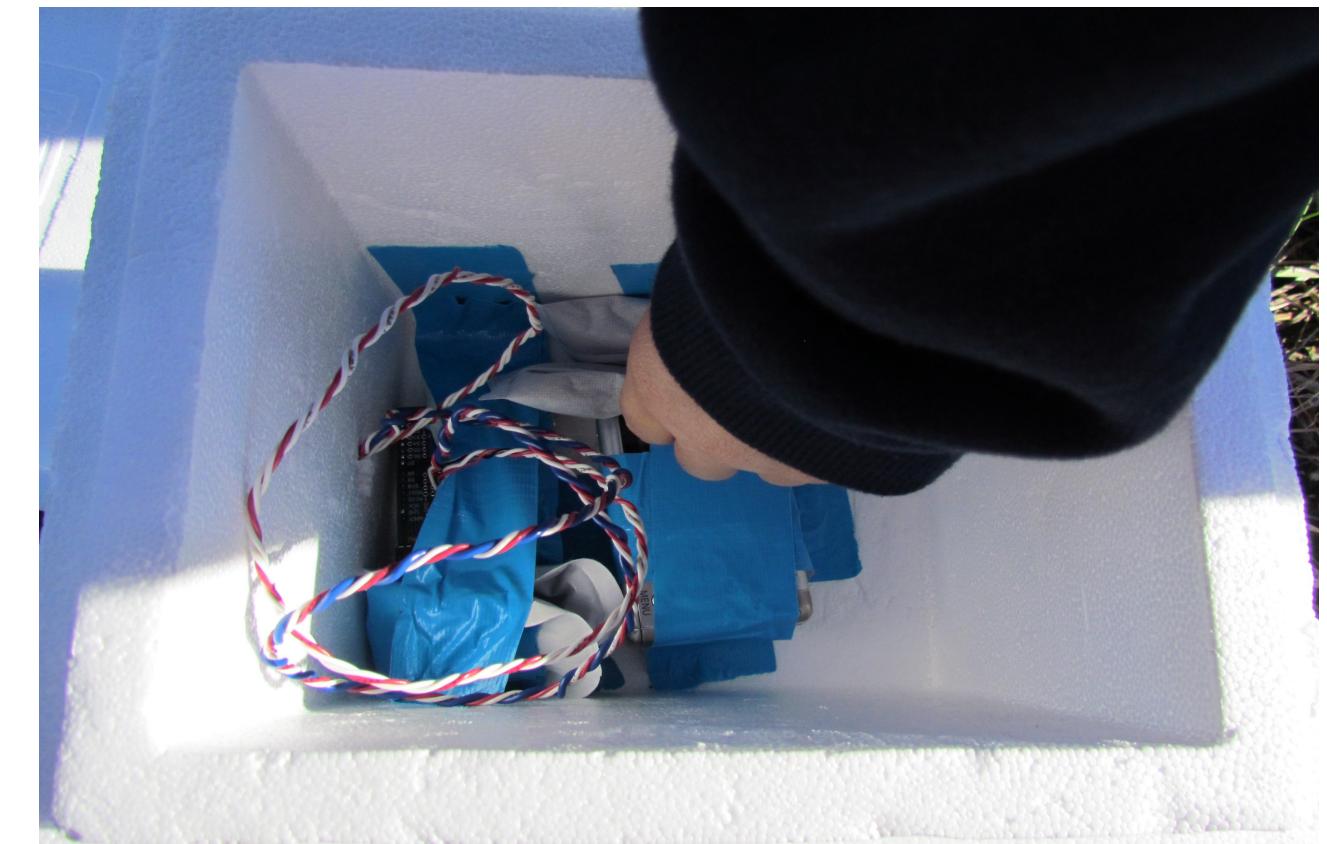


Figure 5: Inside the styrofoam box, the circuit, GPS tracker, and camera were duct taped down to prevent movement.

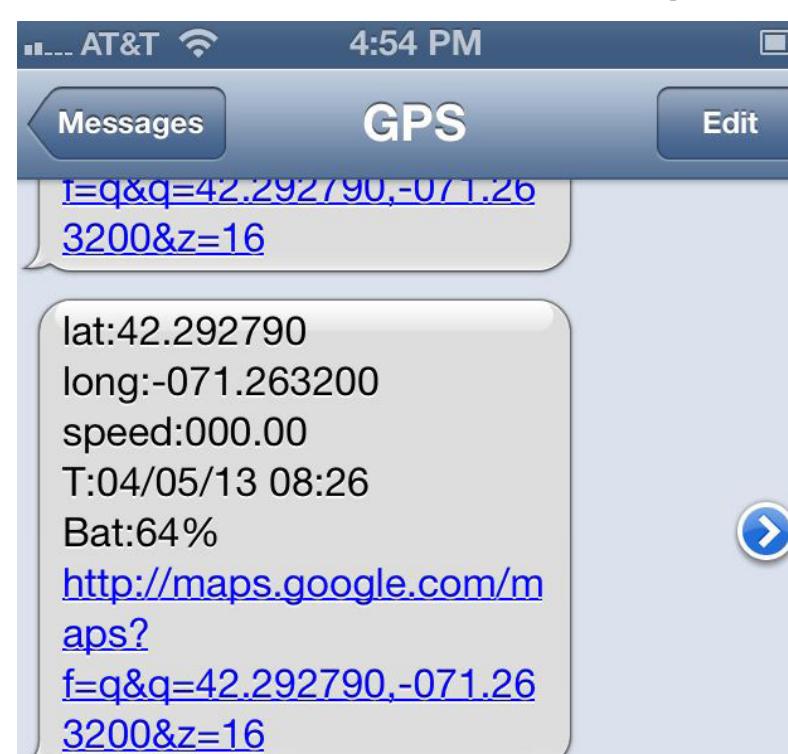
The “Tethered Launch Incident”

On tethered launch day, we assembled the payload almost as if we were going to launch. It was much the same except we did not activate the GPS tracker. We used 30 lb. fishing line as our tether, filled our balloon and slowly started to let the whole thing out, only to have the line fail and our entire project float away with no means of tracking it.

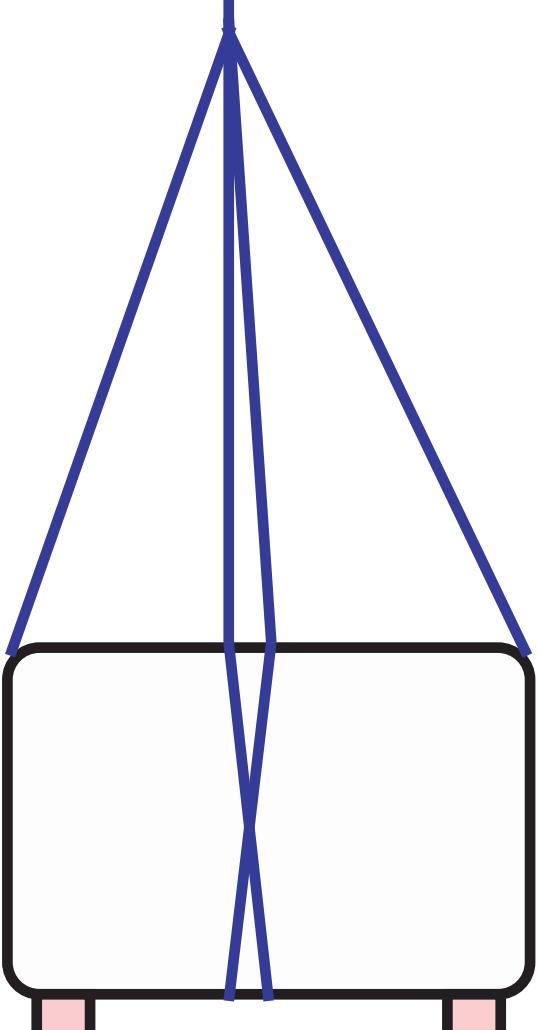


GPS Tracking

Following our disasterous tethered launch, we immediately began replicating the electrical and mechanical systems of our first balloon. We proceeded in much the same way and eventually had to figure out GPS tracking, as shown below.



Figures 3 and 4: GPS tracker test and device



Launch Day

We launched from Williamstown, MA and landed in Spencertown, NY. We did not recover the balloon.

