



NS-59 - A 54'000 feet Launch!

The NS-59 balloon launch consisted of a shorter payload lineup this launch with Dr. Laurence's stratospheric flow disturbance measurement payload (Fish), the weather and environment sensing payload (Tyrion), and a new camera module carrying prototypes of Balloonduino, a microcontroller designed specifically for the Balloon Payload Program (BPP).

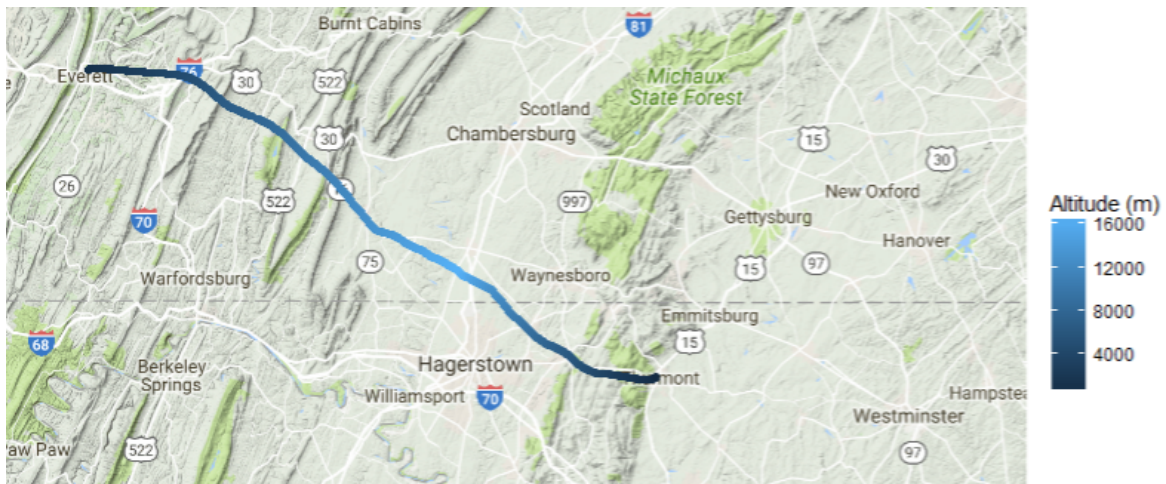
The week before the launch, the ballooneers closely monitored the predicted ground track noting that a launch from Clear Springs or Hagerstown would have landed the payload string at Aberdeen Proving Grounds or in the Bay. As a result, the team moved our launch site north and west to Everett, PA for the first time in BPP history!

On Saturday, October 29th, the winds were calm and the weather was beautiful. At 9:11

AM, the team gently released a 3000g balloon with a 50 ft payload string, holding Fish in a stable horizontal position. A video of the launch sequence can be found [here](#).



A Short Chase



Chase was a wild ride! The tracking vans drove through winding pathways, trying to stay under the balloon to keep radio lock as the balloon entered the jet stream. The balloon continued upwards at a fast pace (6m/s) and then an as-yet-unexplained anomaly occurred: the balloon burst prematurely at 54,000 ft (as opposed to our expected 90'000 - 100'000 feet)! Perhaps a flaw in the skin of the balloon caused an early burst but currently, there is no conclusive evidence.

Payload Recovery - Sling Shot and Tree Climbing!

The payloads descended via parachute, snagged a tree branch, and became

entangled at the top of two very tall neighboring trees in a backyard in Thurmont, MD. After 3-4 hours of considerable effort with a super slingshot, ropes, and many creative ideas, the team conceded for the day to come back the next day with a professional tree climber. The tree climber got all the payloads down very quickly, with only slight damages to Command Module and Fish. As frustrating as the NS-59 launch was with the low altitude and challenging recovery, it was at least as Dr. Laurence has pointed out, a "character-building" day!

A quick review of the video from the camera payload showed Fish swinging considerably, but data from the thin-film velocity probes was successfully recorded. Unfortunately, the flight did not go high enough to see the expected calming of the motion above 60,000 ft and the more meaningful velocity measurements above 80,000 ft, however, a reflight of Fish is being planned.

The next flight is NS-60, which will carry all of the ENAE-100 student's payloads, is currently planned for Saturday, November 12, weather and ground track permitting. More information will come in the official announcement email.



Questions?

Contact Dr. Mary Bowden

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Live Updates

You can view our live tweetup of the launch day [here](#) and view highlights with [#ns59](#).

You can also track the balloon on the [APRS](#) website using UMD's callsign: [W3EAX-8](#).

*The NearSpace High Altitude Balloon Team thanks the **Maryland Space Grant** for its continued support and effort to make our program possible.*

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