



**BRIDGING COLLEGE STUDENTS AND
K-12 STUDENTS TOGETHER
THROUGH HIGH ALTITUDE
BALLOONING**

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WHY LINK HAB AND STEM?

- Science
 - Experiments
- Technology
 - Tracking hardware/software
- Engineering
 - Design
 - Cohesiveness of components
- Mathematics
 - Calculations



WHY LINK COLLEGE STUDENTS WITH K-12 STUDENTS?

- Teamwork
- Group leadership
- Role Models



IOWA STATE AND AMES SCHOOL DISTRICT

- Started with Michael Lazere and a grant from the Ames Education Foundation.
- Wanted students to see “Big Picture” ideas instead of details
 - As well as keep kids interested in Math and Science
- 3 Students as well as 1 Staff from Iowa State University volunteered to help student group



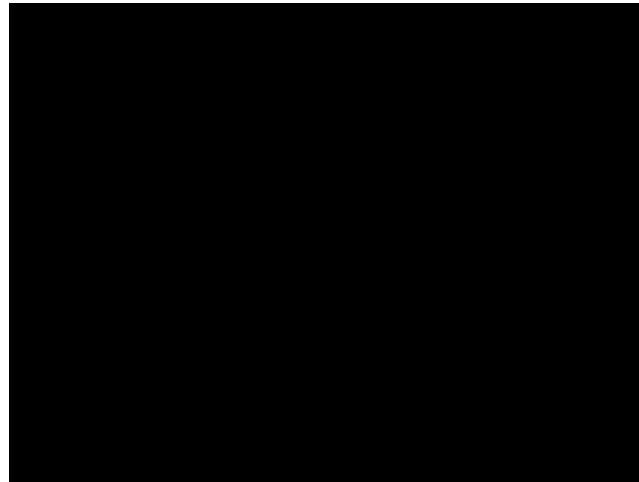
FIRST COLLABORATION FLIGHT

- Arduino board was used to collect data to be studied after flight
- 2 Cameras were within the payload as well
 - One looking out of the box
 - Once situated to watch experiment within the box



PHOTOS

- Short video on liquid experiment



PHOTOS

- Pictures from L-126-A



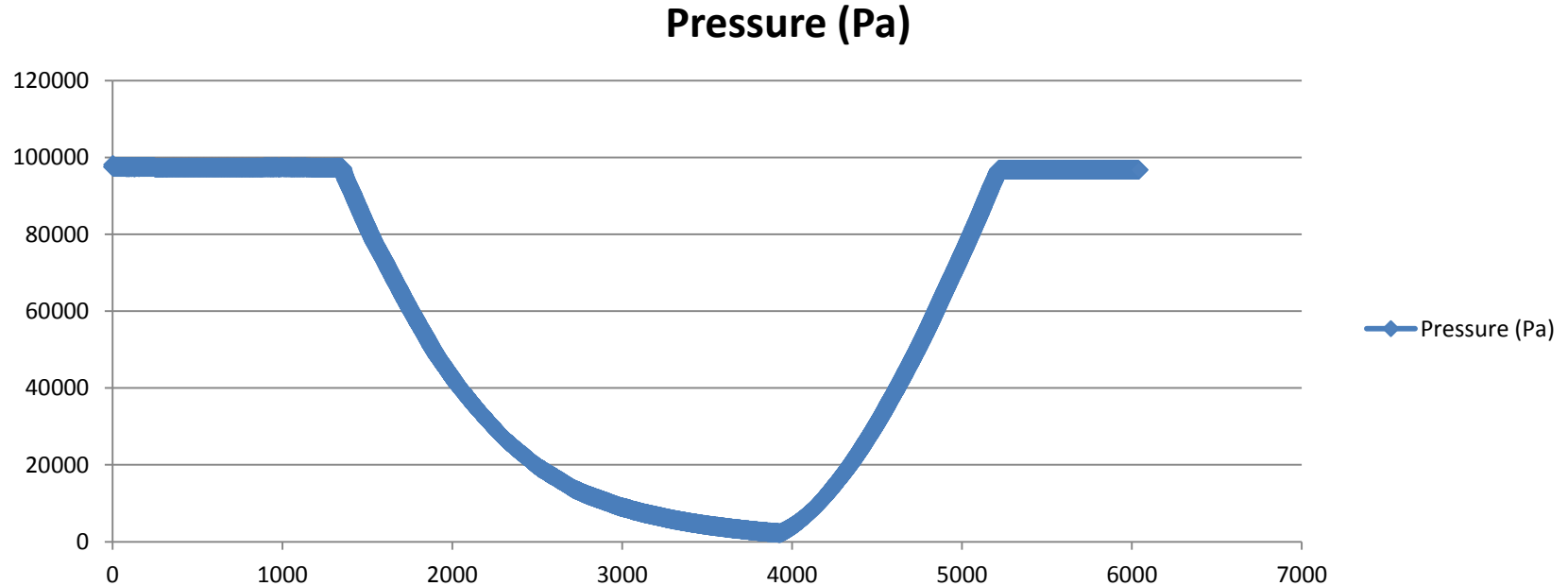
PHOTOS

- A few glitches were found with the still camera
 - Was set to RAW mode, filled up the card too fast
 - Only a 4GB card used
 - Due to the high humidity that day the window frosted over
- One issue identified with the video
 - Once again, only a 4GB card was used



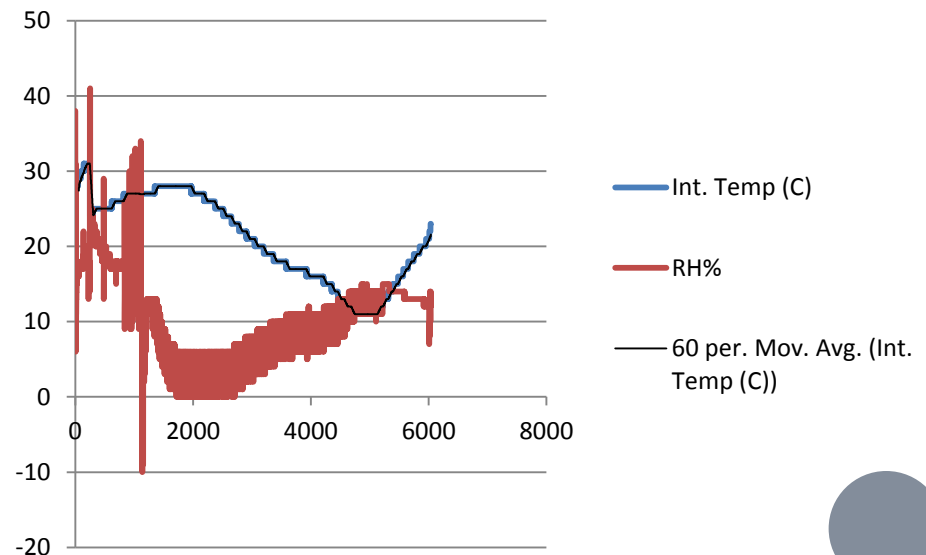
DATA

- Temperature, pressure and humidity were on board



DATA

- Pressure was as expected, temp and humidity were not
- A glitch was found in the code and it was not polling the right sensors for temp/humidity



LESSONS LEARNED

- As this was the first flight for this group, a very steep learning curve was soon discovered
- Project itself was mainly engineering project
- Data gathering can be used as examples within the classroom
- Students come up with experiments that the “HAB Club” could then launch



LOOKING AHEAD

- Hope students form “HAB Club”
 - Student run club that will be taught to new members through the experiences of older members
 - This club will be extra-curricular and allow both middle school and high school students to work together with college students

