Balloon 2 Project Write Up

Sending a second balloon up to 100,000 ft and taking environmental measurements as well as photos and other readings.

# Division of Labour:

* Back-end:
  + Balloon Software - Corin and Lluc
  + Balloon GPS and Data Sending - Evelyn and Dean
  + Ground Station and Data Receiving – Will
* Front-end:
  + Data Representation - Noah and Finlay

# Phase 1:

A balloon will be sent up with the following sensors and other measuring equipment:

* Sensors to detect the following substances:
  + Temperature [Sense HAT]
  + Humidity [Sense HAT]
  + Pressure [Sense HAT]
  + UV Light [Parallax 28091]
  + Dust and other a[Sharp GP2Y]
  + Concentration of CO2 [MG-811]
  + VOCs [Adafruit BME680]
  + Ozone and NO2 [MQ-131]

# References

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| [Adafruit BME680] | Adafruit BME680 contains temperature, humidity, barometric pressure, and VOC gas sensors.  <https://www.adafruit.com/product/3660> |
| [MG-811] | MG-811 Gas (CO2) Carbon Dioxide Sensor. <https://www.sainsmart.com/products/mg-811-gas-co2-carbon-dioxide-sensor> |
| [MQ-131] | Sensors for detecting Ozone gases and Nitrogen Dioxide (NO2).  <https://www.sainsmart.com/products/mq-131-gas-sensor-ozone-module> |
| [Parallax 28091] | Parallax 28091 UV Light Sensor measures ambient ultraviolet intensity in the 200 to 370 nanometre range, including solar ultraviolet UVA, UVB, and UVC light.  <https://www.mouser.co.uk/ProductDetail/Parallax/28091?qs=Cb2nCFKsA8ocEJSQCpJBhQ%3D%3D> |
| [Sense HAT] | Following sensors: Gyroscope, Accelerometer, Magnetometer, Temperature, Barometric pressure, and Humidity.  <https://www.raspberrypi.org/products/sense-hat/> |
| [Sharp GP2Y] | Dust sensor Sharp GP2Y1010AU0F is for detecting fine particle larger than 0.8μm in diameter. <https://thepihut.com/products/dust-sensor> |
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