

## The Importance of Data Storage

Note: The balloon launch site is around the area of Mount Barker. The proposed launch site is at a farmer's property in Wistow. Pictures of the launch site are at: [http://pipe2.darklomax.org/pics/2012-10-07\\_Horus\\_29/](http://pipe2.darklomax.org/pics/2012-10-07_Horus_29/) and the location is: <https://www.google.com.au/maps/place/35%C2%B007'39.2%22S+138%C2%B050'51.4%22E/@-35.1279687,138.847769,388m/data=!3m1!1e3!4m2!3m1!1s0x0:0x0>. The proposed launch is scheduled for the third week in September.

### Description of problem

Data is not transmitted during the mission, but is stored and retrieved for analysis after the mission. Therefore data storage and rates of data collection must be sufficient to cover the time of the balloon flight.

### Camera Data Storage



What is the size of the micro SD provided for the camera? The camera can be operated in video mode or in time lapse mode. (The manual provides details about these modes). What are the advantages and disadvantages of video mode compared to still images?

The flight should be about 2 hours. Calculate the storage required at the highest video resolution. Look at the time lapse section of the manual. Calculate the storage required for the shortest and longest intervals. Which interval would you recommend and why?

Try out both modes on the camera and measure the data storage use. Check if your calculations match what you observe. Recommend whether you should use video or time lapse photography.

### Micro SD Card Storage



What size is the micro SD card supplied? Assume that each set of data measurements is 1Kb and the sample rate is 10 times a second and the flight is 2 hours. How much storage is required in this case? Is data storage of the micro SD card sufficient?

(Limitations are also connected to the Arduino processor, but it works satisfactorily with 1 and 2 GB cards.)

## Report

Prepare a report which:

- Describes the goals of your task
- The investigation you undertook
- Reports storage capabilities of the camera and micro SD card and whether they will meet the requirements of the mission.