

Land use under the flight path

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/ 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

Remote sensing is an important part of satellite investigations and can be used for a range of applications including land use, identification of mineral deposits, weather forecasting and disaster management. This activity looks at using remote sensing data to investigate land use under the path of the balloon. The team will need to recommend the appropriate orientation of the camera, and whether high-resolution photographs or video would supply the most useful data.

Background

Watch the presentation on remote sensing:

- What is remote sensing?
- Satellites are used for remote sensing on earth. List the remote-sensing uses as described in the presentation.

Investigation

The GoPro camera can be used for earth observations during the balloon flight. Remember that the CubeSats are stacked 4 high so 3 cameras point horizontally and only one can point vertically. The arrangements of the cameras will have to be negotiated between schools.



Side facing camera



Down Facing camera

The experimental design will need to take into consideration how the collected data can be presented and analysed after the flight, which will include GPS coordinates. You may need to discuss your project with the groups plotting altitude and predicting the path of the balloon to accurately represent land use on a map of southern South Australia. Can you identify geographical features, including waterways, roads, railways, towns and agricultural land use? Is it useful to compare your results with images from Google Earth and Google maps? Based on the predicted flight path, you will need to estimate the size of your map.

Report

Prepare a report which:

- Describes the goals of your task
- Explain the purposes of remote sensing
- Describe how you will graphically represent your results once the data has been retrieved after the flight.