

## Weather Conditions

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

The success of the balloon's launch and flight is dependent on the prevailing weather conditions. Using the camera for remote sensing observations require minimal cloud cover. Researching historical weather data will help to determine the launch window (which is the range of dates for the most suitable launch). Once a launch window is selected, it will still be necessary to use the 1-7 day forecasts as provided by the Bureau of Meteorology to confirm the launch date and time.

Since the balloon could potentially fly as high as 35km, upper atmospheric data such as the Jet Stream also needs to be investigated.

### Local Weather conditions

The Bureau of Meteorology keeps statistical records of climate at <http://www.bom.gov.au/climate/data/>.



Select Mount Barker (SA) for your analysis. Investigate the range of data available, in particular using the weather and climate selection. Look at least the last 10 years of available data for the proposed launch window to investigate:

- The likelihood of clear skies and calm weather
- Rain and wind patterns for the proposed launch date.

### Higher Altitudes

At higher altitudes, the effect of the jet stream needs to be taken into account. Use the site: <http://www.wunderground.com/global/Region/AU/2xJetStream.html> for your investigation. Investigate the jet stream and its prevailing direction over South Australia.

### Report

Prepare a report which:

- Describes the goals of your task
- The investigation you undertook
- Report on your findings regarding the local and higher altitude weather conditions for the proposed launch window.