



# Wpn Experiment Procedure

## Balloon Fest, 2008

Date: Saturday, May 31, 2008

We will launch a tethered meteorological balloon to 1000 ft elevation at the Tobin James Cellars, Paso Robles, CA as part of the Balloon Fest, 2004.

**Purpose:** to measure barometric pressure, relative altitude, & temperature. We hope to see if they change uniformly with altitude. We plan to specifically see if these reading have drifted from launch to recovery and then to look for patterns in the readings as compared to barometric pressure.

**Equipment:** Laptop computer with LabPro software, Balloon, helium, gondola with instrumentation, stopwatch, 1000ft of nylon cord, bright orange ribbon flags.

**Payload:** Styrofoam object.

**Weight:** ~ 1/3lb

### Flight Procedure:

1. Fill balloon with helium until it will lift at least 500 g more than the weight of the fully loaded gondola.
2. Securely tie balloon closed and attached to metal ring. Attach all rigging including the gondola, directly to the ring.
3. Start the written log. Measure and record the wind speed. As the flight continues, note all start and stop times as well as any comments or observations about the wind speed & direction or the balloon and gondola's behavior.
4. Launch balloon and let it rise smoothly about 100 ft or 30 m. Stop, tie a bright ribbon flag around the line and hold at this altitude about 3 minutes.
5. Continue but faster: rise 150 ft (1 minute), hold altitude
6. drop object and start timer
7. Start smoothly bringing it down. This should take about 5 minutes.

### Data Analysis Procedure:

1. Repeat the above procedure as needed to get good data. Save each set even if not complete.
2. When all Flight tests are done:  
Be sure all data sets are saved and labeled.



3. Analyze the data in the Logger Pro program
  - a. Graph #1: surface area vs. time
  - b. Annotate graphs with notes from experiment log
4. Transfer graphs to PowerPoint
  - a. In LabPro, select graph window, Ctrl-C to copy the graph
  - b. Open PowerPoint Presentation, select new page, Ctrl-V to paste the graph on that page