

Balloon Fest

Ideas for Experiments

- Altitude Profiles:
 - a. **Barometric Pressure**
 - b. **Air Temperature**
 - c. **Humidity**
 - d. **CO₂ or O₂ %**
 - e. **Magnetic Intensity**
 - f. **Electric Field strength**
 - g. **Cosmic Ray Flux**
 - h. **Sound frequency attenuation vs altitude**
Constant sound generator, microphone, oscilloscope with fourier analysis, printer and computer
- **Laser Corner Reflector** for laser rangefinder or other studies
- Find the **point directly below** the balloon
- **Differential GPS** to very accurately measure altitude
- **Trigonometric Altitude** measurement
Two or three base stations, solid geometry, simultaneous measurements
- **Aerial Pictures** for altitude measurement
Interesting perspective but also ability to measure altitude by apparent size of image
- **Remote Sensing**
AIRSS: Crop Vigor
- **Comparison of altitude measurements** by barometric pressure, line length & angle, Laser rangefinder, GPS, Trig, and plate scale. Precision & accuracy.
- Minimum **Aneroid Barometer device** to determine maximum altitude
One-way valve to allow air out will sample lowest pressure if T is const.
- **Release and track a balloon** to measure air movement vs altitude.