The background features several stylized balloons in purple, green, and light blue, each with yellow triangular streamers. The text is centered over this background.

Balloon Satellite Post 632

October 18, 2006

Tom Morton

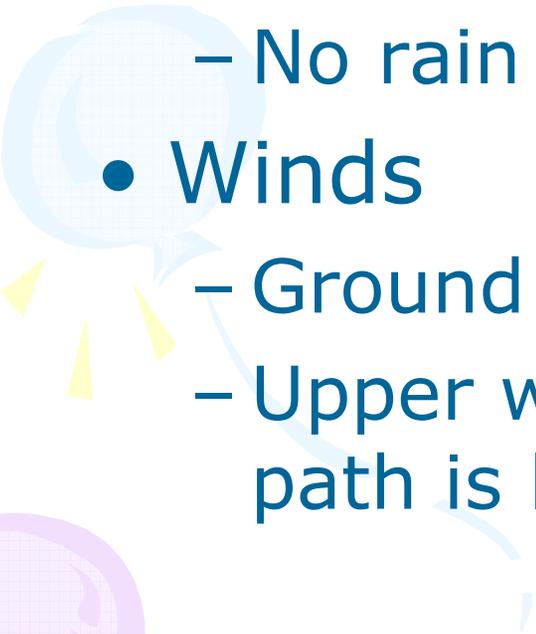


Launch criteria

- Weather

- Mostly clear
- No rain in area

- Winds

- Ground winds < 10 mph
 - Upper winds slow enough that flight path is less than about 70 miles
- 
- 

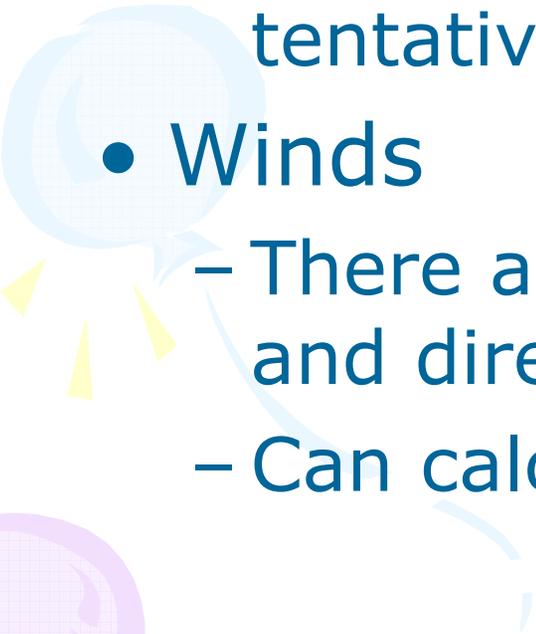


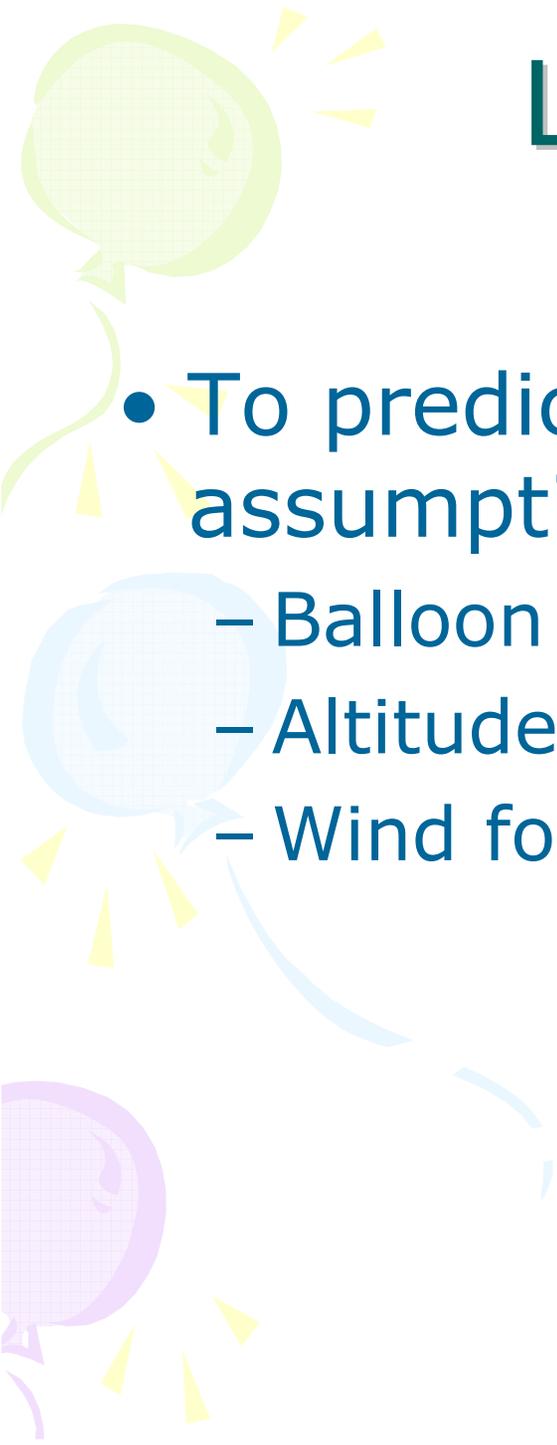
Launch criteria

- Weather

- We will examine weather forecasts for tentative launch date

- Winds

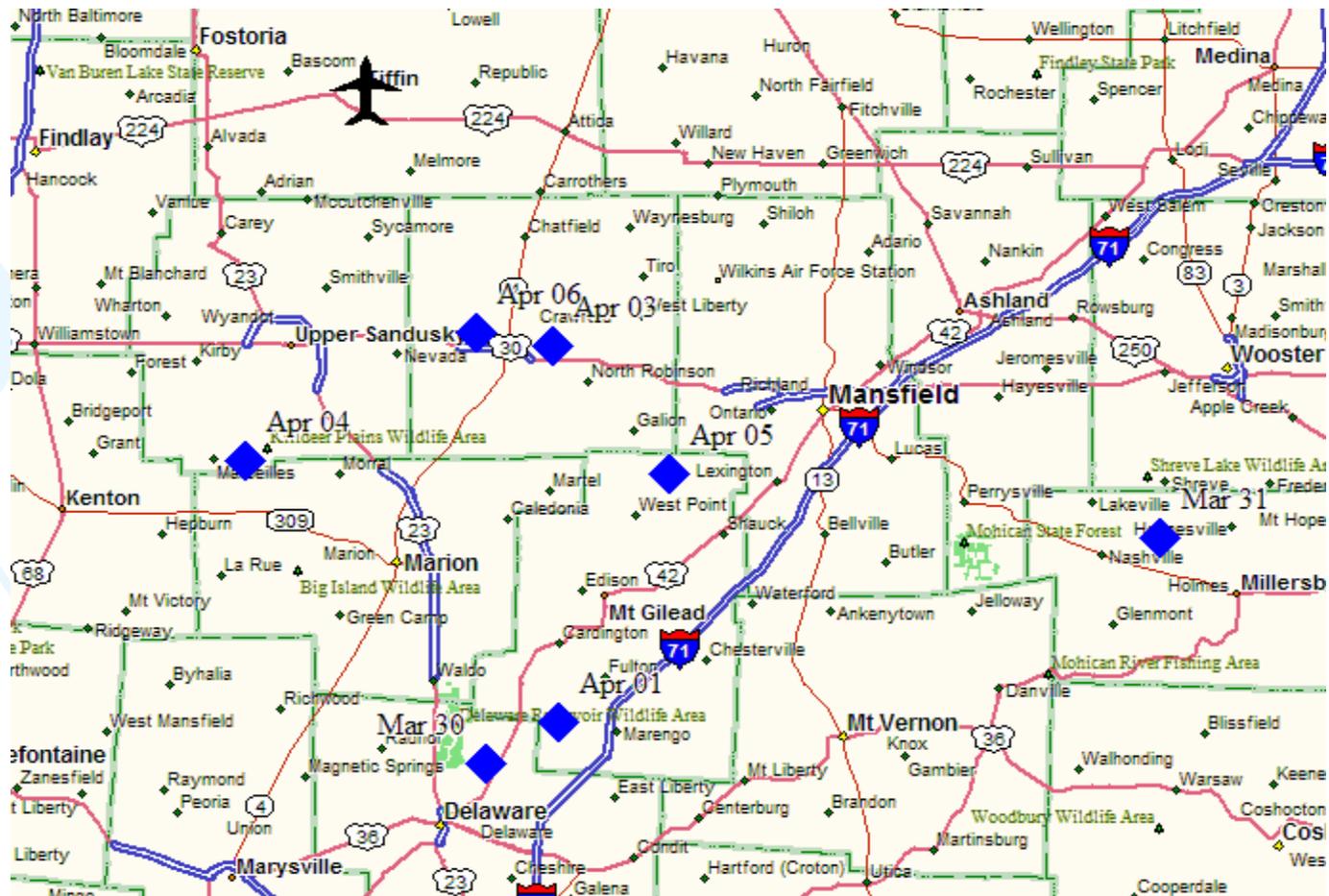
- There are also predictions of wind speed and direction
 - Can calculate a tentative flight path
- 
- 

A decorative graphic on the left side of the slide features three balloons: a green one at the top, a light blue one in the middle, and a purple one at the bottom. Each balloon has a string and is surrounded by several small yellow triangular shapes that resemble sun rays or confetti. The balloons are arranged vertically, with the green one at the top, the blue one in the middle, and the purple one at the bottom. The strings of the balloons are thin and curved, extending downwards from each balloon.

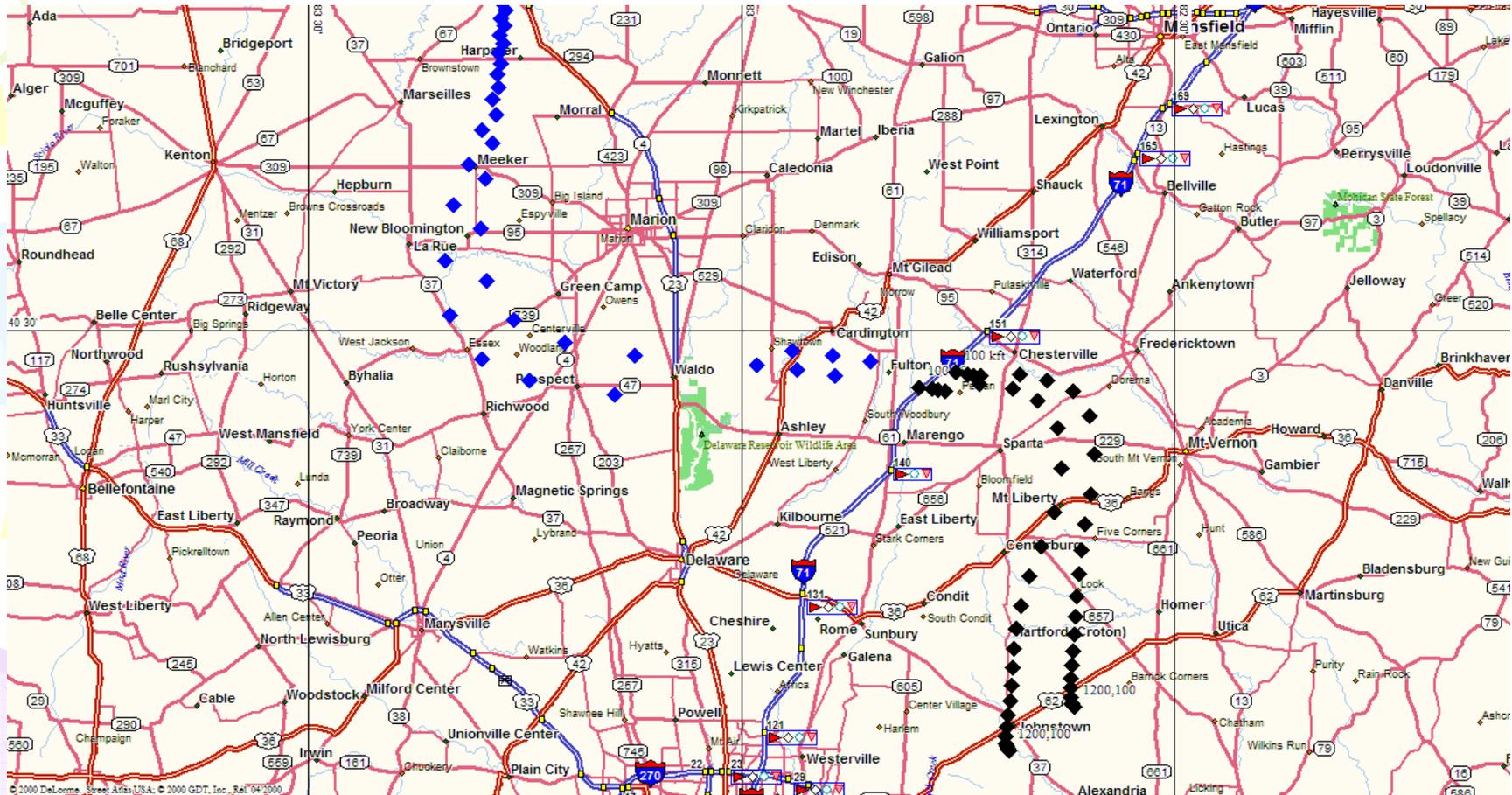
Launch criteria Flight Path

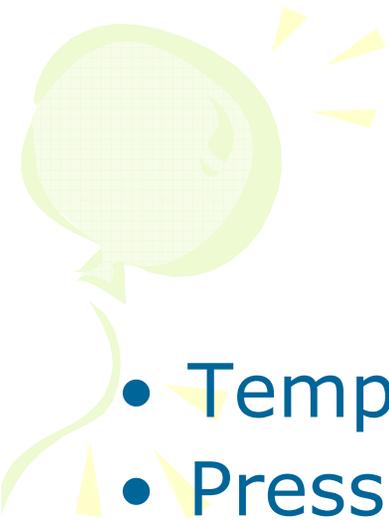
- To predict flight path, need some assumptions:
 - Balloon rise rate: 800-1000 feet/minute
 - Altitude at balloon pop: 100-120,000 ft
 - Wind forecasts

Variation of predictions



Last October flight path



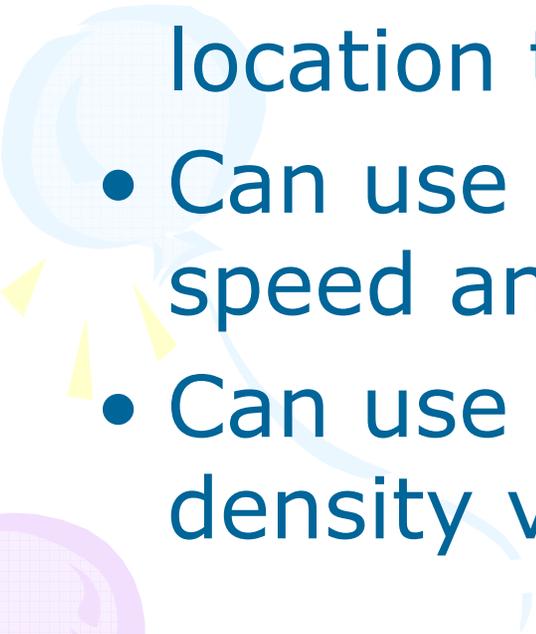


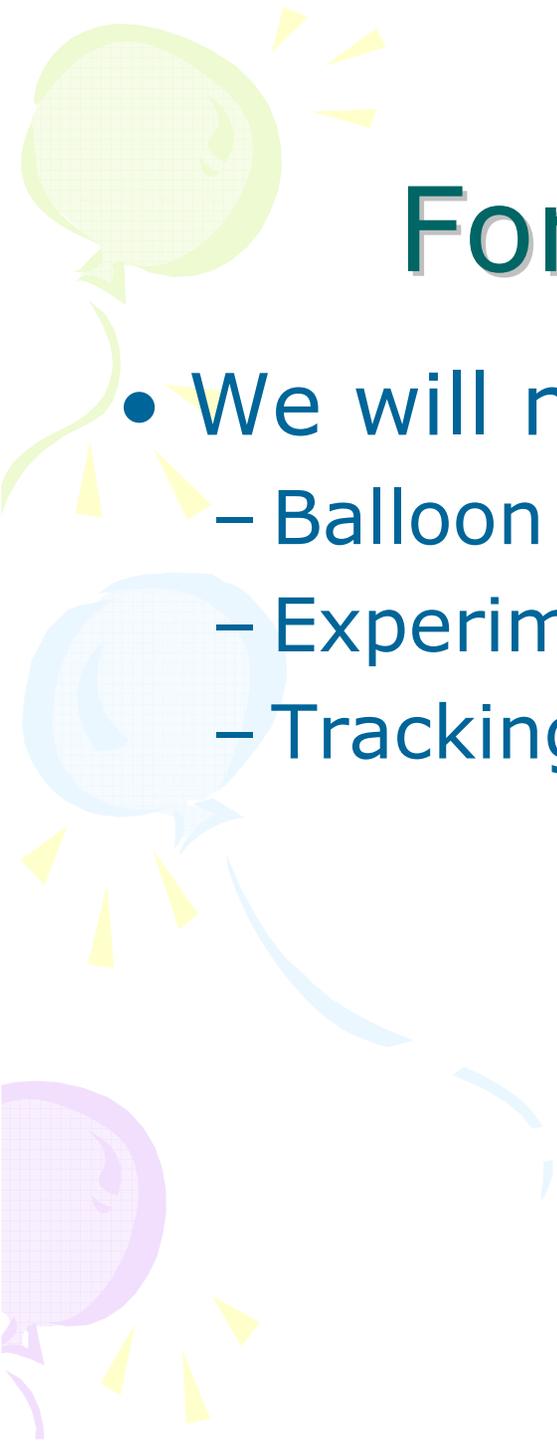
Experiments

- Temperature – internal and external
 - Pressure – external
 - Spin rate?
 - Payload spins while it rises and falls
 - If we can understand how fast, we can design better photography
 - Photographs
 - Looking down at earth
 - Looking out at horizon
 - Water freezing/boiling
- 
- 



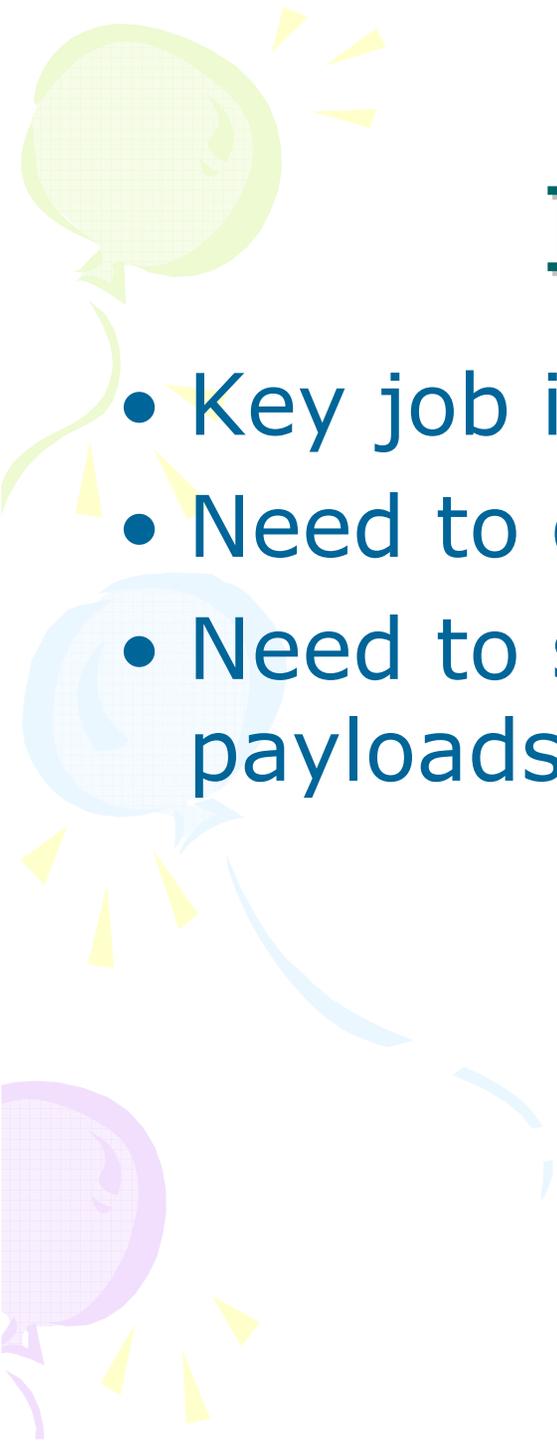
Experiments

- We will have a GPS onboard
 - Will use ham radio to communicate location to ground crew
 - Can use GPS data to calculate wind speed and direction
 - Can use rise rate to find atmospheric density variations
- 
- 

A decorative graphic on the left side of the slide features three balloons: a green one at the top, a light blue one in the middle, and a purple one at the bottom. Each balloon has a string and is surrounded by several small yellow triangular shapes, resembling confetti or streamers. The balloons are arranged in a vertical line, with the green one at the top, the blue one in the middle, and the purple one at the bottom. The strings of the balloons are also visible, extending downwards.

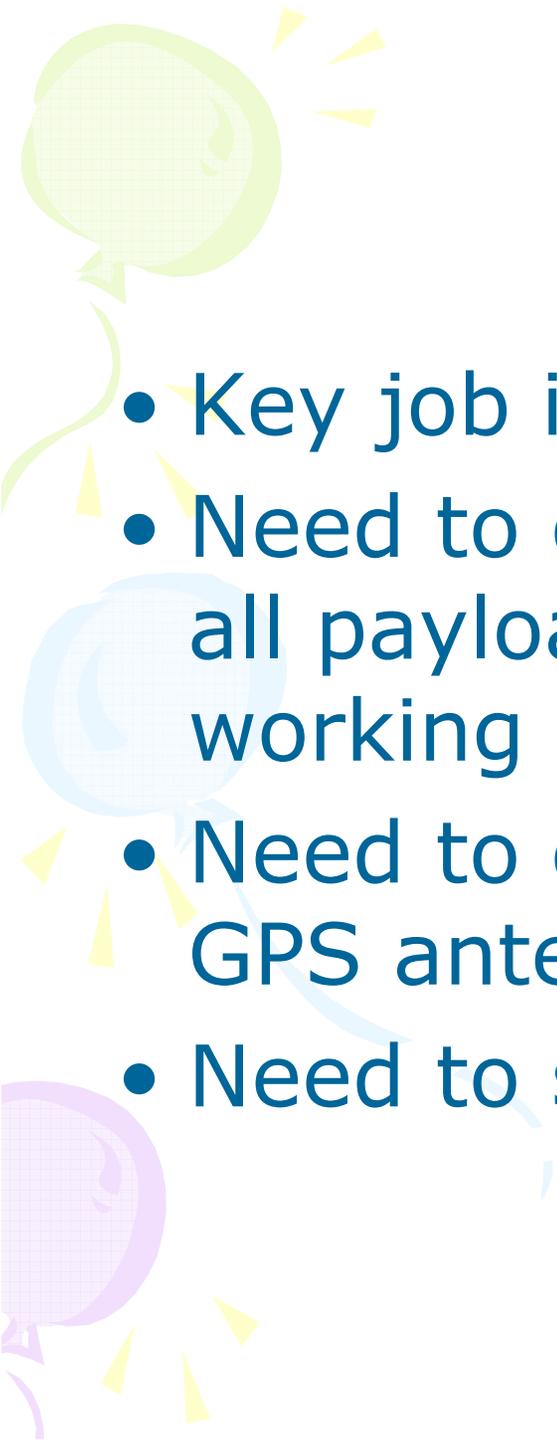
For October launch

- We will need three teams
 - Balloon Inflation
 - Experiment setup
 - Tracking and retrieving



Inflation team

- Key job is to inflate balloon
- Need to confirm correct lift
- Need to secure parachute and payloads to balloon



Payload team

- Key job is to activate payloads
- Need to confirm that power is on to all payloads, and that electronics are working correctly
- Need to confirm that both radios and GPS antennas are working correctly
- Need to secure payloads together



Tracking and retrieving team

- Key job is to retrieve balloon after landing
- Need to confirm that ham radios are receiving data from payload **before launch**
- Need to track balloon as it flies and falls
- Need to secure permission from landowner to retrieve balloon
- Need to assist inflation team in managing balloon as it inflates
- Need to download data from balloon after retrieval

Inflation Activities



Inflation Activities



Inflation Activities



Inflation Activities



Inflation Activities



Inflation Activities



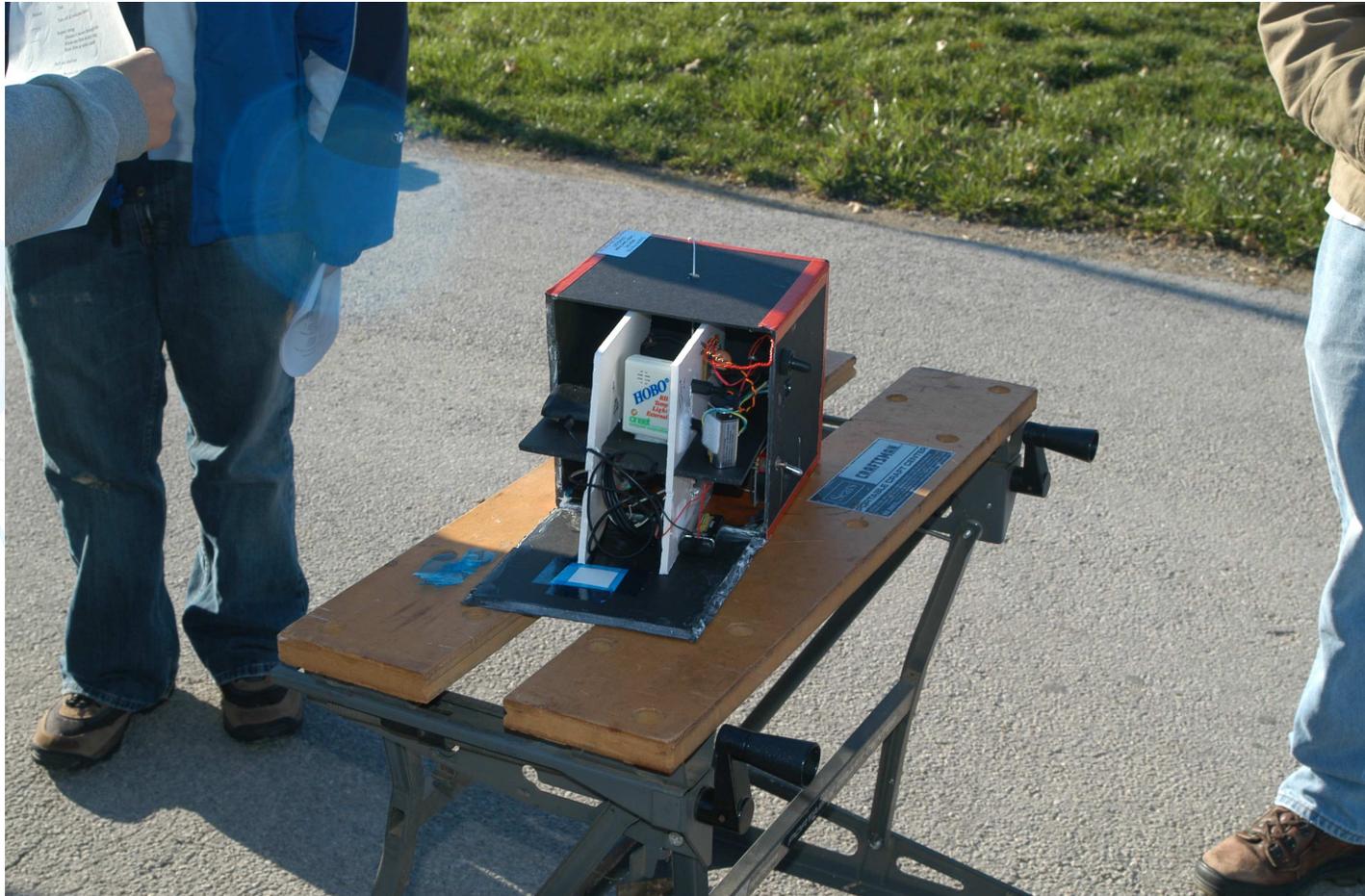
Inflation Activities



Payload Activities



Payload Activities



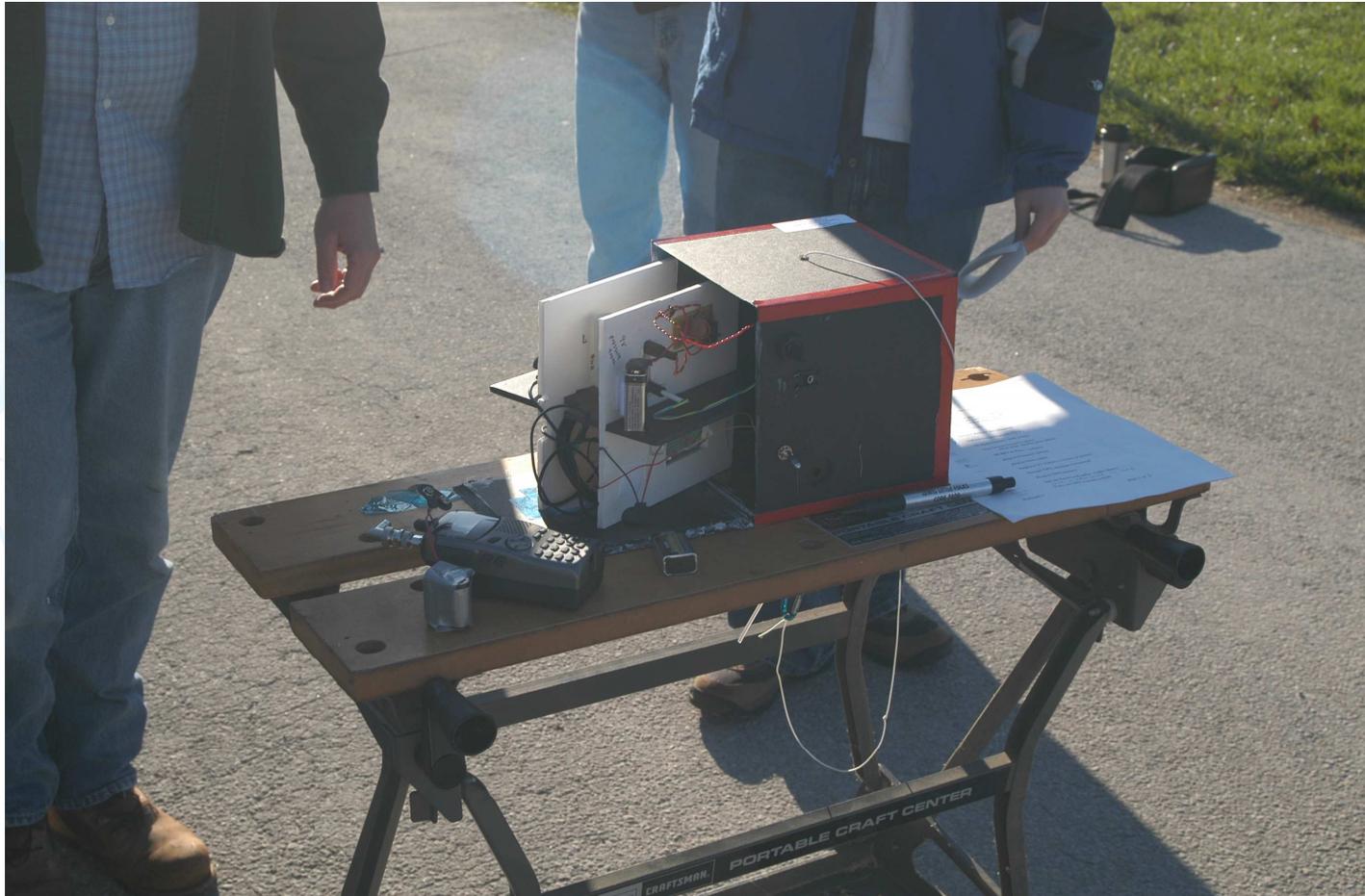
Payload Activities



Payload Activities



Payload Activities



Payload Activities



Payload Activities



Payload Activities



Tracking Activities



Tracking Activities

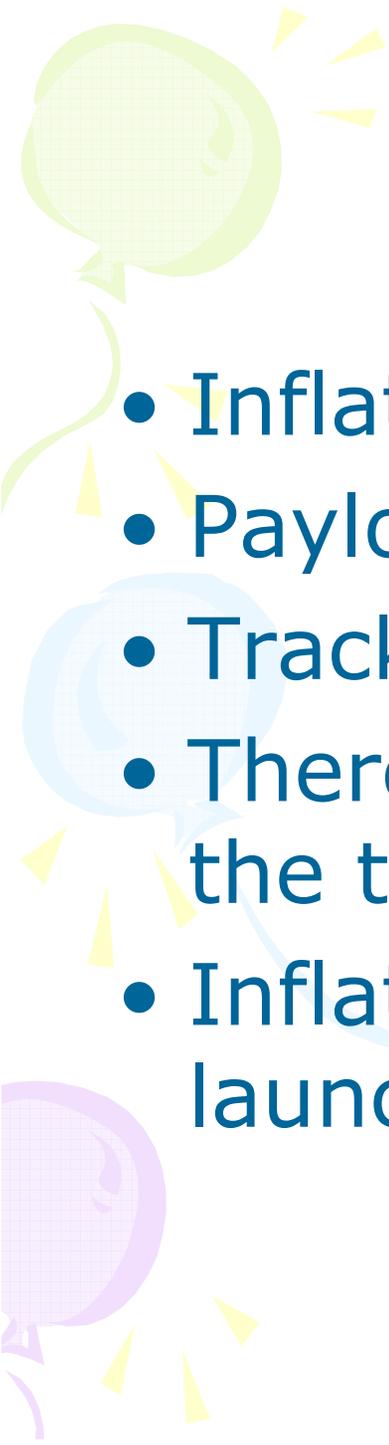


Tracking Activities



Tracking Activities





Team Breakdown

- Inflation Team needs 2-3 people
- Payload Team needs 3-4 people
- Tracking Team needs 2-3 people
- There is substantial overlap between the teams during the launch phase
- Inflation and Payload teams clean up launch site after launch