



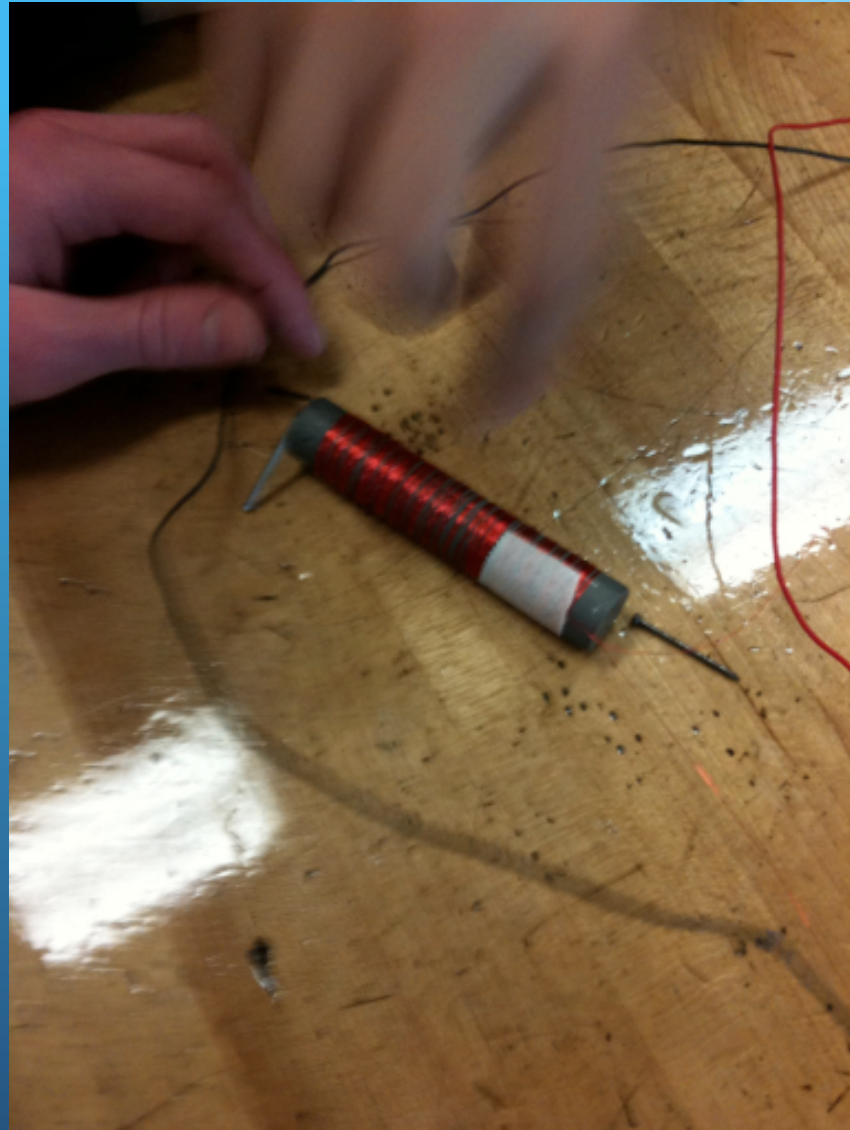
# CubeSat Club Meeting

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Mr. Michael Paluszek  
Ms. Eloisa de Castro  
Princeton Satellite Systems  
6 Market Street, Suite 926  
Plainsboro, NJ 08536

# Last Time

- Built two more magnetic torquers
- Tested solar panels



# CubeSat Components

- Let's look at what we need to build a CubeSat
- We will break it down by type of component
- Start with structure
  - CubeSat frame supports all the components
  - Provides mounting points for components
  - Attaches to the CubeSat launcher
  - What do you think is important for the structure?

# Electronics and Power

- Boards
  - Computer
  - Input/Output
  - Power Supply
  - Command and telemetry
  - Maybe data storage
- Battery
- Solar panels
- Other things you can think of?

# Sensors for Control and Nav

- Magnetometer
  - We experimented with the one in the iPhone
- Accelerometer and Gyro (has an internal accelerometer)
  - Pass it around
- Two cameras
  - Pass it around
- Global Positioning Receiver
  - Pass it around

# Actuators for Control

- Reaction wheels
  - Will build these soon
- Magnetic torquers
  - We built these

# Mechanisms

- Deployment hinge for the magnetometer
- Springs for separation from the launch vehicle
- Maybe deployment hinges for antennas

# Communications

- Antenna to communicate with the earth
- GPS antennas for our GPS chips



# Thermal

- Radiators on the top and bottom
- Gold foil where we don't have solar panels
  - Gold foil is an insulator
- Where does the heat come from?
  - Sun (but we will have eclipses)
    - Directly
    - Via power consumed by components
- What components produce heat?

# Next steps

- Test out reaction wheels
- Build a battery charger
- Connect solar panels, torquers, battery and reaction wheels and control with switches
- Simulate an orbit using the high intensity lights