Launch and Field Operations
without leaving your Office
and
CubeSat Test Opportunities

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Overview

• Need for incentives for new students
• Need for bringing launches to the classroom
• Opportunities for testing CubeSats
• Bringing new students into the space community
• Beyond CubeSats
Need for incentives for new students

• Why aren’t students interested in Science & Math?
  • “Most boring subject – no connection to real world”
  • “Video games much more fun”
  • Bad teachers discourage students

• Should all students be interested in Science & Math?

• Should all students go to college?

• We need feed lines of students that want to take challenge of STEM

• How do we encourage students to get in that line?
Need for bringing launches to the classroom

• Provide programs in grade and high school for student space experiments
  • Build payloads for LOW space simulation & activities
    • 3 ft diameter balloons
    • 100k ft altitude balloons
    • Amateur rockets 12k ft, 30k ft, 60k ft, 100k ft, 380k ft.
  • Problem→ can not take all students to launch
  • Take the launch to the students
  • Have trouble launching rockets launching rockets from Stanford Campus

• Get real time data link (GEO links) from launch sites to classroom
  • Real time two-way video
  • Two-way audio
  • Two-way data to test payload and get payload data during test
Space Mission Center in the Classroom

HitC School

Other Schools observing

Internet

Launch Site

NASA
Opportunities for testing CubeSats

• Payload flight opportunities

  • 3ft diameter balloons (Do it yourself)
  • 100k ft altitude balloons (Several Universities)
  • Amateur rockets 12k ft (ARLISS – Sept every year)
  • 30k ft, 60k ft, 100k ft, 380k ft (Rocket Maverick – July, Oct)
  • 5k ft - ??? (Garvey SC – July, August, …..)
  • ??? – way up there (Lunar Rocket & Rover – this year)
CricketSats – on balloons
CanSat- on balloons
CanSat – on airplanes
CanSat – on rocket
CubeSats – on balloons

Flight Hardware and Experiments
Spectrometer Flight Box

Spectroradiometer
Radiation Exposed
Cuvettes
AstroChemistry Experiment
PC104 Computer
WebCam
GPS and Radio Beacons
Flight Operations
Flight Profile
End of the Flight
Bringing new students into the space community

• Take fun projects to the schools

• Need full time mentors

• Need micro funding to purchase materials

Effort being lead by:

California Space Authority
WIRED Program

See Christine Purcell
Beyond CubeSats

Moon

Mars

Asteroids

Comets

And beyond
Questions for You?
Think about where we 10 years ago with small satellites?
Where will we be 10 years from now?
Beyond CubeSats

Moon

Mars

Asteroids

Comets

And beyond
Thanks