

The logo for KySat, featuring the text "KySat" in a bold, sans-serif font. The "Ky" is in black and the "Sat" is in a grey color. A yellow swoosh underline is positioned below the text, starting under the "y" and ending under the "t".

**KySat**

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## The KySat Consortium

CubeSat Developers' Workshop  
Logan, Utah  
11 August 2007

<http://www.kysat.com>

# Ownership Consortium



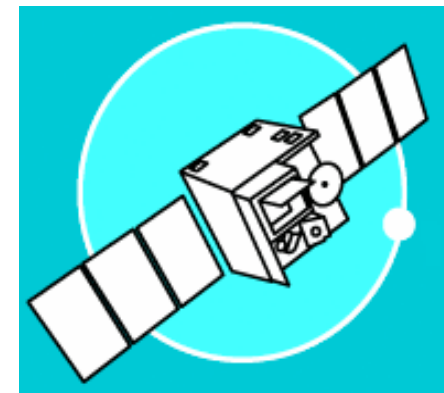
# Mission Partners



# Current KySat Projects



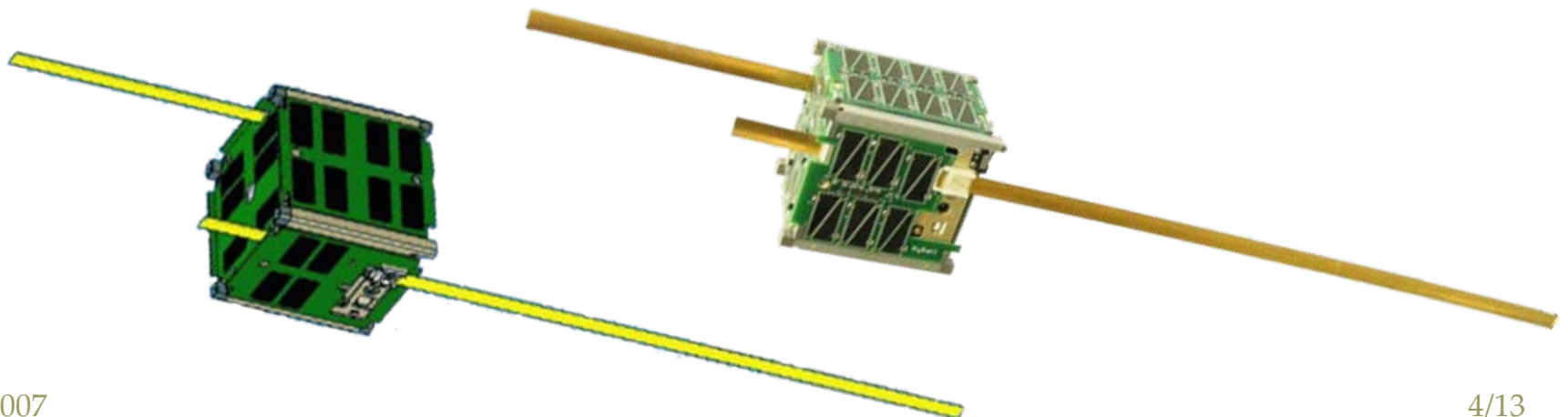
- Space Express
  - Training Mission
  - Sub-Orbital Non-Recoverable
  - Launch December '07
- KySat1
  - Foundation for Advanced KySat Missions
  - K-12 Target Audience
  - Launch in 3Q '08



# KySat Major Milestones



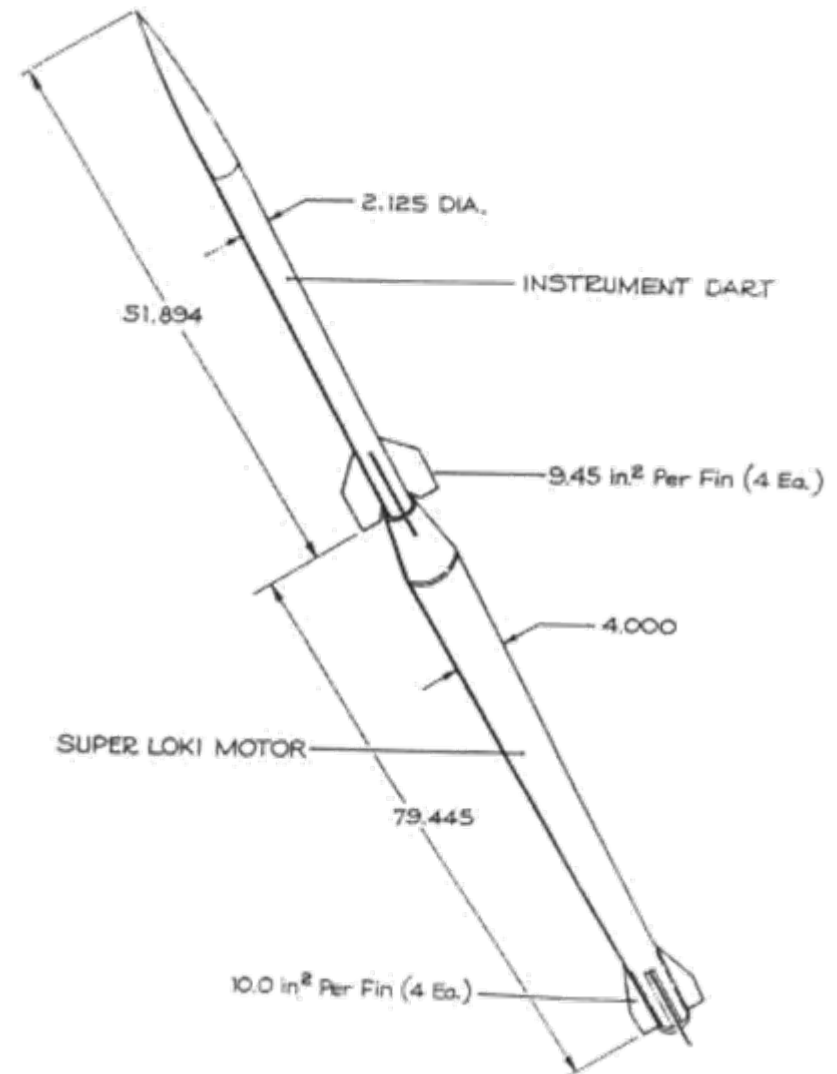
- ❑ May '06 KySat Consortium was created.
- ❑ May '07 KySat1 Engineering Model was Built
- ❑ June '07 KySat Announced the Launch of Space Express
- ❑ June '07 KySat1 Successfully Entered the Test Pod



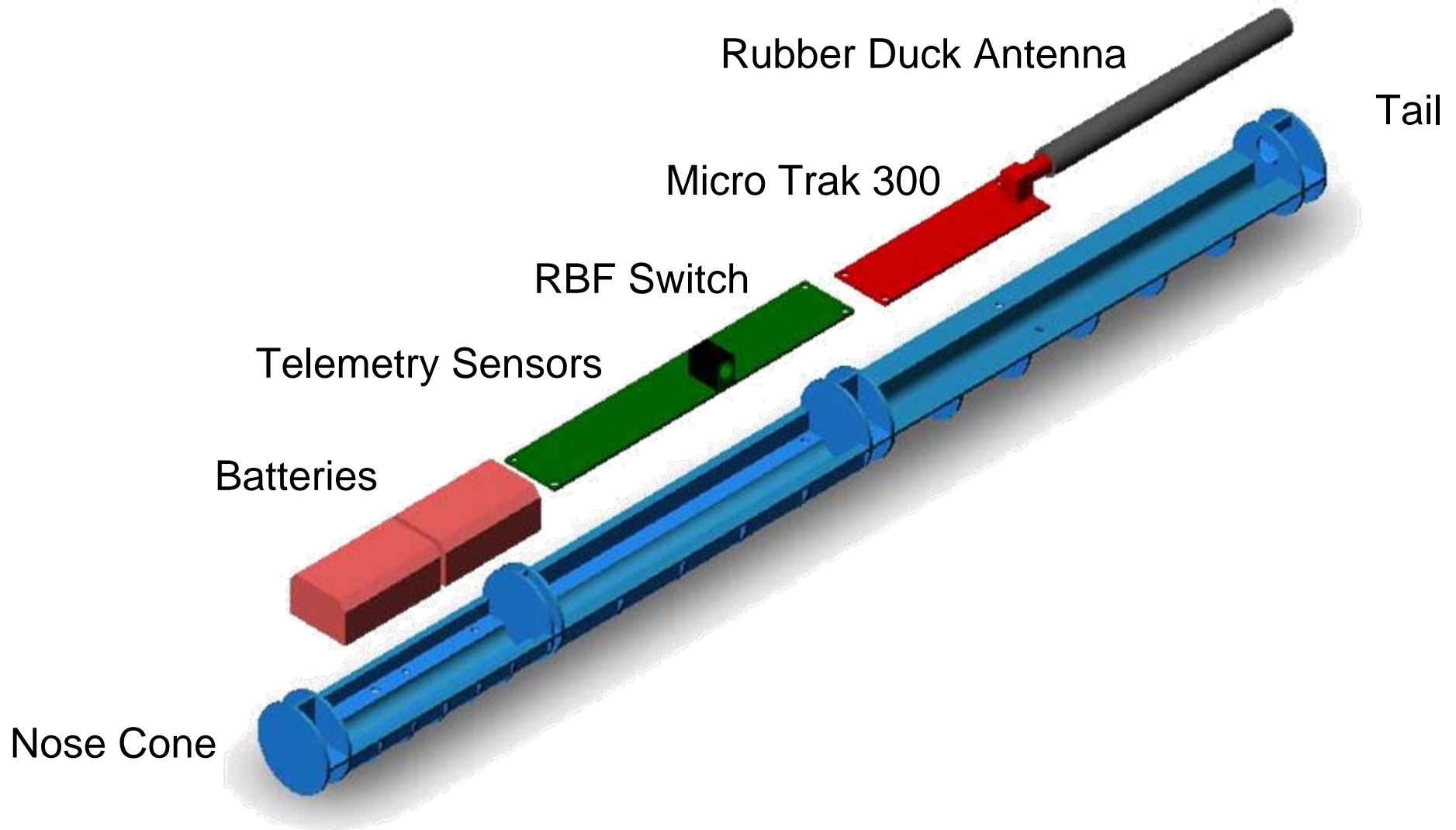
# Space Express Mission



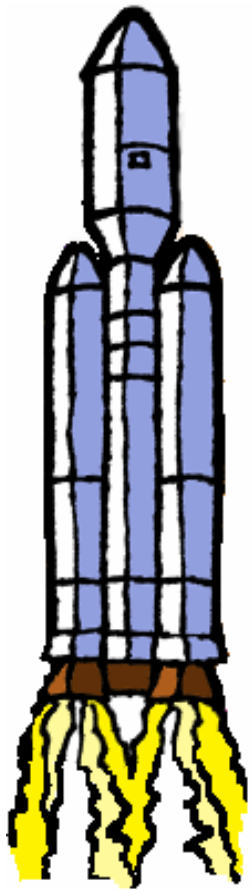
- ❑ Did you get to space?
- ❑ Did it work?
- ❑ Training Mission
- ❑ Flight Testing Hardware and Software
- ❑ Flight Testing Processes



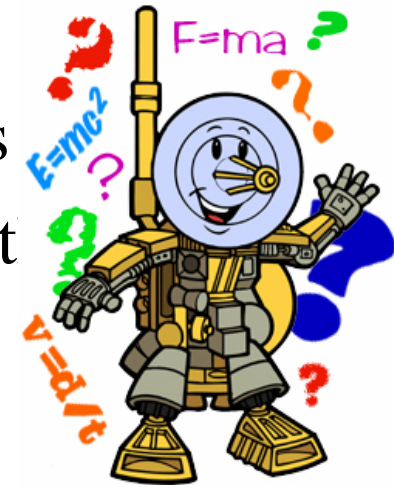
# Space Express Payload



# KySat1 Mission Objectives



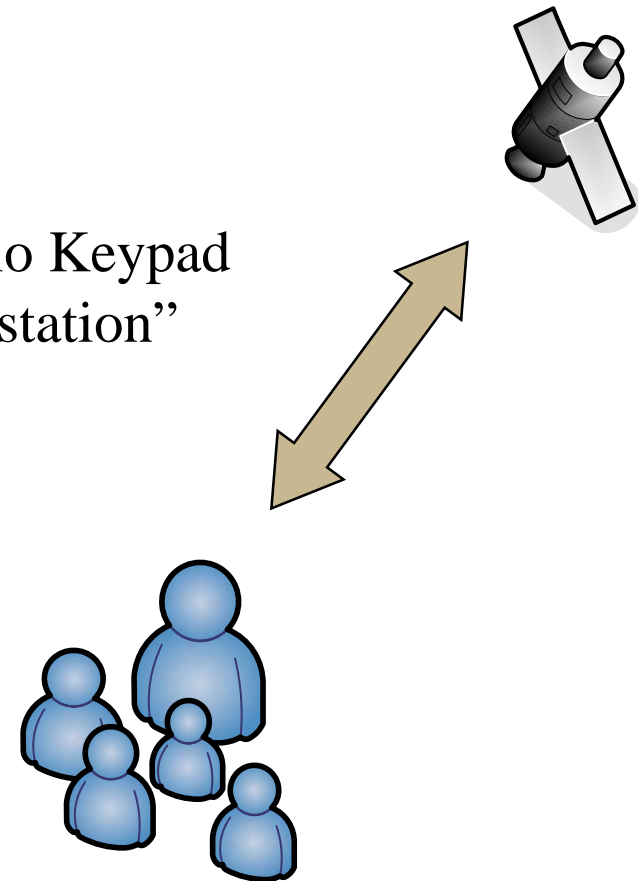
- The Purpose
  - Build technological interest in Students
  - Science, Technology, Engineering, Mat
  - K-12, 13-16, 17 plus...
- The Plan
  - Design an Attractive Concept of Operations
  - Design and Build a Satellite to Enable ConOps
  - Provide Educational and On-Orbit Support



# Concept of Operations



- Basic Mode
  - Capabilities
    - Audio Playback
    - Photo Capture
    - Audio Telemetry
  - Actions Initiated Automatically or Radio Keypad
  - No computer required for “playground station”
- Advanced Mode
  - Capabilities
    - Upload data
    - Download data
  - Transactions archived on server
  - Additional hardware required

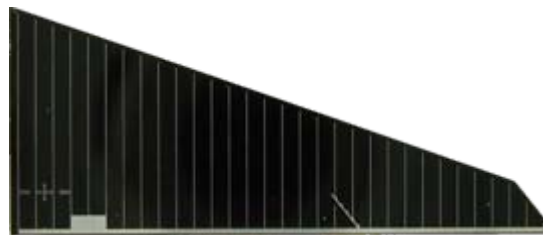
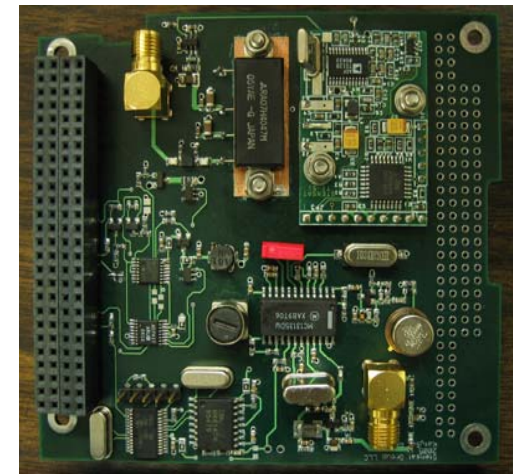
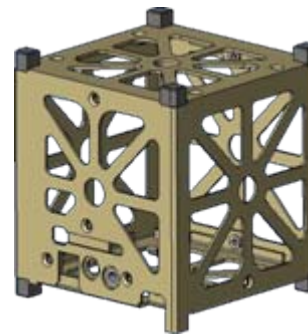
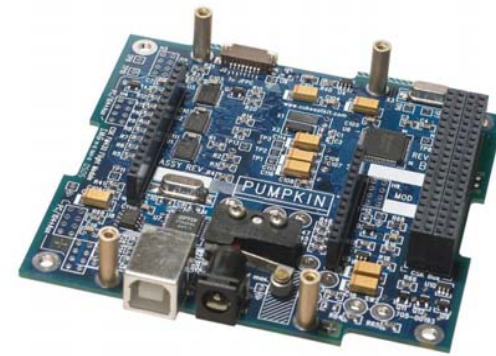




# KySat1 COTS Components



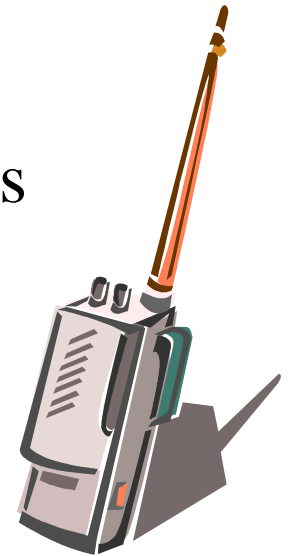
- Pumpkin's CubeSat Kit
  - Frame
  - FM430
  - HCC-Embedded FAT File System
- Microhard S-Band Radio
- Clyde Space EPS
- StenSat UHF/VHF Radio
- Spectrolab Solar Cells
- CO Media JPEG Camera



# KySat Ground Segment



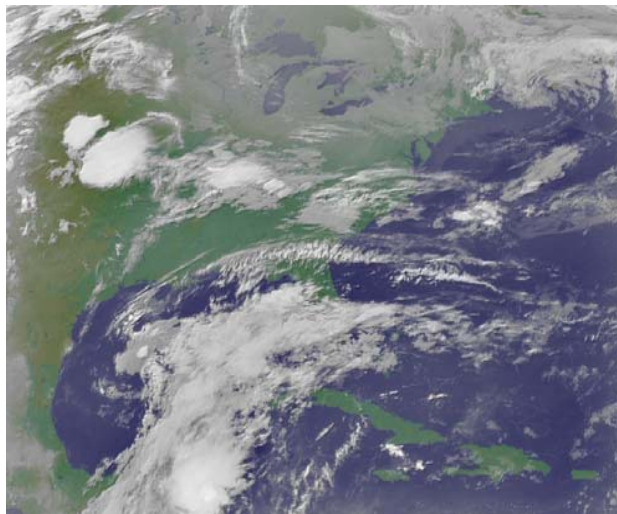
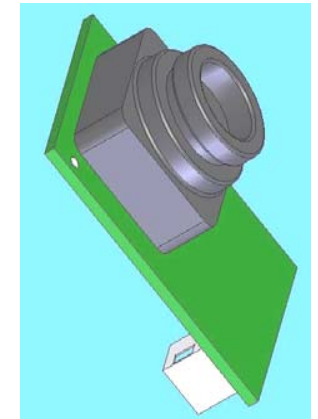
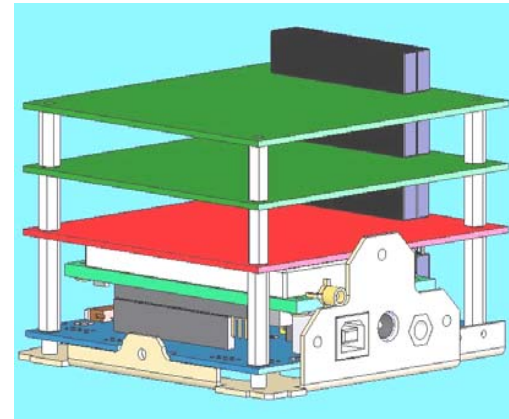
- Main Ground Station
  - S-Band Communications
  - Primary Data Pipeline
- Secondary Ground Stations
  - K-12 School Users
  - Ham Radio Enthusiasts
  - Kentucky Universities
- Data Packet Network
- KySat.com
- End Users



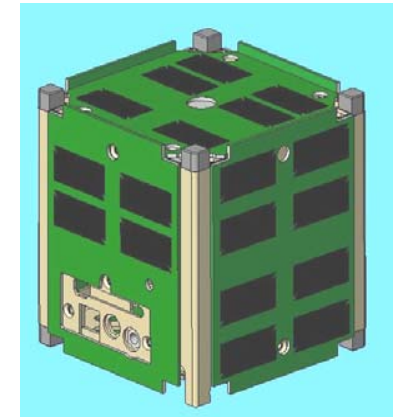
# What Will KySat1 Do?



- Payloads
  - Photographs
  - S-Band Radio (High Bandwidth)
- Audio
  - Playback
  - Audible Telemetry



- Data
  - Morse Code
  - Digital Beacons
  - File Transfer
- Other
  - DTMF Commanding
  - Command Schedule
  - Power Mode Switching



# Standout Differences



- ❑ Automatic Packet Reporting System Compatible
- ❑ Morehead 21-Meter S-Band Communications
- ❑ S-Band Radio as Payload
- ❑ KySat System Support Module
- ❑ KySat Payload Interface Module
- ❑ Audio Telemetry
- ❑ Rapid Design & Build
- ❑ K-12 Educational Focus





<http://www.kysat.com>

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