

BalloonSat Program Timeline

Here is a suggested timeline for completing a BalloonSat program. Feel free to adjust as necessary.

Start of Program

Determine when and how to order (pay for) the balloon (1200 gram from kaymontballoons.com)
Reserve lifting gas (hydrogen or helium)
Build the avionics (flight computer and sensors)
Test the avionics
Learn to use the avionics
Determine avionics considerations/limitations (sensor orientation, exposure, hand warmers, etc.)
Position and orient the avionics to determine the size and shape of the airframe
Paper design airframe making use of camera bay, avionics bay, and sensor bay
Add hatch closure and tethering tubes to paper design
Deconflict design issues (like tubes covering camera apertures)
Measure twice and cut once
Test fit twice and glue once
Integrate avionics into the airframe
Test BalloonSat for functionability (can avionics be started in place and will they collect data)
Test BalloonSat for shaking (will it hold together)
Test BalloonSat for dropping (will it hold together when it lands)
Test BalloonSat for cold operation (will it continue to operate in the cold of near space)
Write up a launch checklist
Test the launch checklist
Determine the proper order of BalloonSats on the tether (must one be below another)
Learn to predict a balloon flight
Learn to track the near spacecraft (aprs.fi/call-sign)
Make daily flight predictions the week prior to launch
Determine location of launch site (based on predicted winds and landing zone)
Arrange to pick up the lifting gas

Day or Two before Launch

Tether the BalloonSats and integrate them into the near spacecraft
Load fresh batteries and a SD card inside of each camera (leave powered off)
Place a hand warmer (unopened) and battery (disconnected) inside of each BalloonSat
Close each BalloonSat with two rubber bands

At the Launch Site (while the balloon is being filled)

Lay out the near spacecraft
Open BalloonSats and place the hand warmers
Turn on the camera
Verify commit pins are in place
Connect the batteries
Close hatch with rubber two bands
Remove commit pin just prior to launch