

Milestone Review Flysheet

CDR

Institution Name	University of California, Davis
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Milestone	CDR Submission
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Vehicle Properties	
Diameter (in)	4"
Length (in)	71.5"
Gross Liftoff Weight (lb)	15.28
Launch Lug/button Size	1"/1.5"
Motor Retention	Slimline ogive boat-tail retainer

Motor Properties	
Motor Manufacturer	Aerotech
Motor Designation	K550W
Max/Average Thrust (N/lb)	655.3/396.8
Total Impulse (N-sec/lb-sec)	1539.1 Ns
Mass pre/post Burn (lb)	3.65/2.087

Stability Analysis	
Center of Pressure (in from nose)	56.2187
Center of Gravity (in from nose)	46.9731
Static Stability Margin	2.31
Thrust-to-Weight Ratio	8.19
Rail Size (in) / Length (in)	1"/96"

Ascent Analysis	
Rail Exit Velocity (ft/s)	78
Max Velocity (ft/s)	538.63
Max Mach Number	0.47
Max Acceleration (ft/s ²)	249.3
Peak Altitude (ft)	4,225

Recovery System Properties	
Drogue Parachute	
Manufacturer/Model	Fruity Chutes
Size	18"
Altitude at Deployment (ft)	Apogee
Velocity at Deployment (ft/s)	0
Terminal Velocity (ft/s)	74.06
Recovery Harness Material	Kevlar
Harness Size/Thickness (in)	0.5
Recovery Harness Length (ft)	30
Harness/Airframe Interfaces	U-Bolt and quick-link connector
Kinetic Energy During Descent (ft-lb)	824.02

Recovery System Properties	
Main Parachute	
Manufacturer/Model	Fruity Chutes
Size	72"
Altitude at Deployment (ft)	832
Velocity at Deployment (ft/s)	74.06
Landing Velocity (ft/s)	14.69
Recovery Harness Material	Kevlar
Harness Size/Thickness (in)	0.5
Recovery Harness Length (ft)	30
Harness/Airframe Interfaces	U-Bolt and quick-link connector
Kinetic Energy Upon Landing (ft-lb)	47.79

Recovery System Properties	
Electronics/Ejection	
Altimeter(s) Make/Model	Featherweight Raven3,

Recovery System Properties	
Electronics/Ejection	
Rocket Locators (Make,	GPS (ArduPilot

	Stratologger	Model)	2.5) with 915Mhz transceiver
Redundancy Plan	Dual altimeters, each with primary and redundant charges (4 charges total)	Transmitting Frequencies	915 MHz
Pad Stay Time (Launch Configuration)	0.174 seconds	Black Powder Mass Drogue Parachute (gram)	2
		Black Powder Mass Main Parachute (gram)	2

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PDR, CDR, FRR

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Payload/Science	
Succinct Overview of Payload/Science Experiment	The payload module will be measuring atmospheric conditions and rocket dynamics through all stages of the rockets flight.
Identify Major Components	Airframe, Recovery System, Payload, Propulsive System
Mass of Payload/Science	14.41 oz

Test Plan Schedule/Status	
Ejection Charge Test(s)	Completed 1/5/13
Sub-scale Test Flights	Completed 1/5/13
Full-scale Test Flights	Completed 3/2/13

Additional Comments

