

FALL QUARTER 1998 MECHANISMS TEAM TASKS

Schedule

August 15	launcher prototype machining finished
August 22	launcher prototype finished
September	test prototype, revise design drawings
October 5	begin engineering model manufacture
November 15	deliver EM
Nov -Dec	test EM, revise design drawings
December 20	launcher design freeze
January 1	start flight launcher manufacture
February 28	deliver flight launcher
March	flight environmental testing
May 1	OPAL flight delivery
September 1	Launch at Vandenberg AF Base

Task	Target	Done
Picosat Launcher Engineering Model -- Jeff		
• Design tweaks	10/6	10/15
• Instrumentation – <i>Eric and David</i>	10/6	Ongoing
• Drawing update	10/8	10/15
• Order rect. and Belleville springs	10/9	10/15
• Order and/or fabricate latch cables	10/9	11/20
• Fabrication quote and submission of drawings to shop	10/9-	10/15
• Delivery of completed EM	11/13	
• Dry lube coating application	11/18	11/18
• Design and build testing apparatus	11/6	12/10
• Testing schedule and procedures -- <i>David</i>	11/6	11/20
• Launch sequence software and hardware controls	12/1	Ongoing
• Budget	10/16	10/15
• Revise drawings for flight hardware	12/18	Ongoing
Launch Interface -- David		
• Actuator redesign (replace frangi bolt with NEA actuator)	10/15	11/20
• Minor modifications to fit OPAL and JAWSAT	10/23	11/20
• Shake interface with OPAL vertically to verify higher g loads and vertical orientation	10/30	11/20
• Design separation switch and turn-on mechanism if OPAL fails to separate (coordinating with the instrumentation and hardware controls).	11/13	11/20
• Redesign and testing if needed	11/24	11/20
Structure -- Santiago		

Task	Target	Done
• Shake structure:		
Gather pieces from old shake structure	10/1	10/1
Design mass boxes, and decide how to attach them	10/15	11/20
Configuration of side wall #2: Picosat side:		
Find out where missing support brackets fit on CPU & Pico tray	10/1	10/1
Locate bracket insert holes in walls and trays	10/1	10/1
Find suitable hexagonal trays to reuse in shake test	10/1	10/1
Find needed materials to make structure: inserts, epoxy, fasteners	10/9	10/30
Machine shop work:	Begin	11/20
Make missing L-brackets, plus a few extras	10/1	
Make side walls from 1/4" aluminum honeycomb		
Make inserts on CPU tray and Picosat tray		
Assemble 10g mass boxes		
Make other attachments: antenna mounts, magnetometer boom		
Assemble shake structure	10/23	11/20
Shake assembled shake structure -- David	10/30	11/20
Construct and deliver mass model to Weber St.	12/1	11/30
• Flight structure:		
Gather, build, and/or order fasteners, inserts, L-brackets	12/1	11/20
If needed, make new hexagonal trays	12/1	NA
Build antenna mounts	12/1	Carry
Modify magnetometer boom	12/1	forward
Build plexiglass solar panel covers	12/1	
Build transport box	12/1	
Testing -- David and Andy		
• Reestablish contacts/relationship w/ Loral, Lockheed Martin, Ames	10/5	10/10
• Interface verification testing		11/23
Identify required testing	10/7	
Test procedures draft based on documented launcher requirements	10/7	
Test procedures final revisions	10/12	
Execute tests to verify that requirements were met	10/30	
Redesign and retest if case of failure		
• OPAL structure verification testing		11/23
Identify required testing	10/7	
Test procedures draft based on documented launcher requirements	10/7	
Test procedures final revisions	10/12	
Execute tests to verify that requirements were met	10/30	
Redesign and retest if case of failure		
• Launcher EM testing		11/23
Identify required testing	10/30	
Test procedures draft based on documented launcher requirements	10/30	
Test procedures final revisions	11/6	
Execute tests to verify that requirements were met	11/30	
Redesign and retest if case of failure		

Task	Target	Done
JAWSAT and Orbital Sciences Corp. -- <i>Jeff</i>		
• Interface Control Document	ongoing	12/2
• Computational mass model to Weber St., CSA	ongoing	12/17
• Physical mass model to Weber State	12/1	12/2
• Finite element model	10/1	10/15
• Weekly telecon Fridays at 12:30 pm	ongoing	Ongoing
• Integration meetings at OSC in Chandler, AZ	monthly	Ongoing
• Battery trickle charger through ASU	ongoing	Ongoing