



# PACE 2012



*"Blessed is the man who,  
having nothing to say,  
abstains from giving us  
wordy evidence of the  
fact."*

George Eliot (1818-1890)

## Mechanical

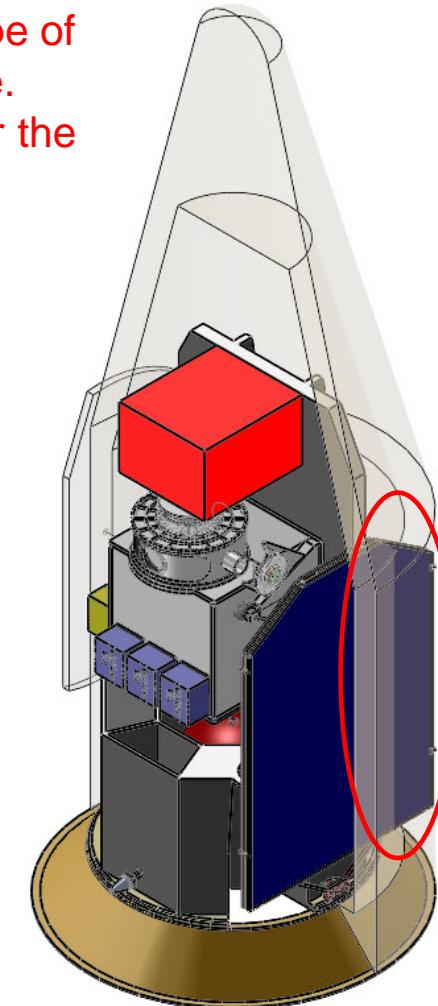
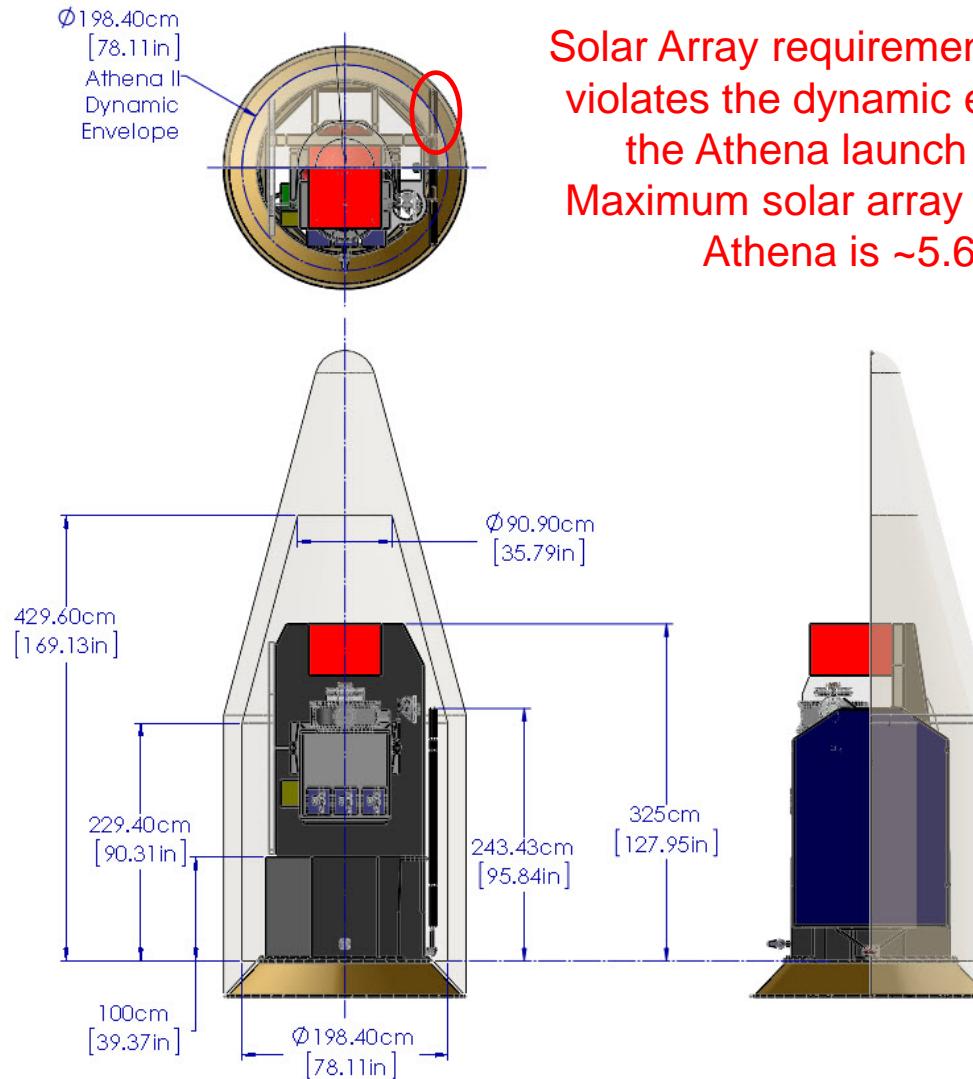
14 – 18 May, 2012

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# Launch Configuration (Athena II)

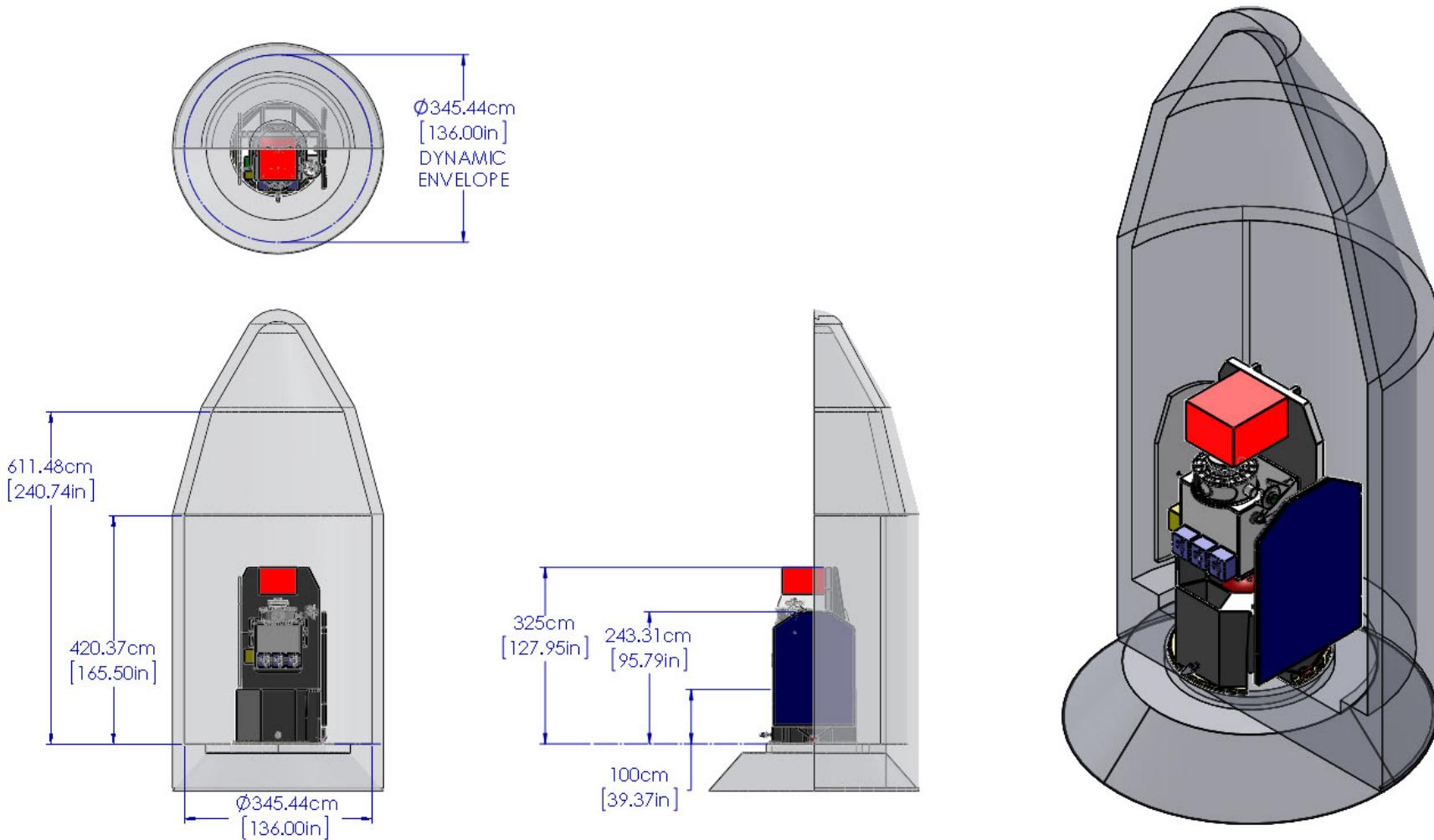
M I S S I O N   D E S I G N   L A B O R A T O R Y





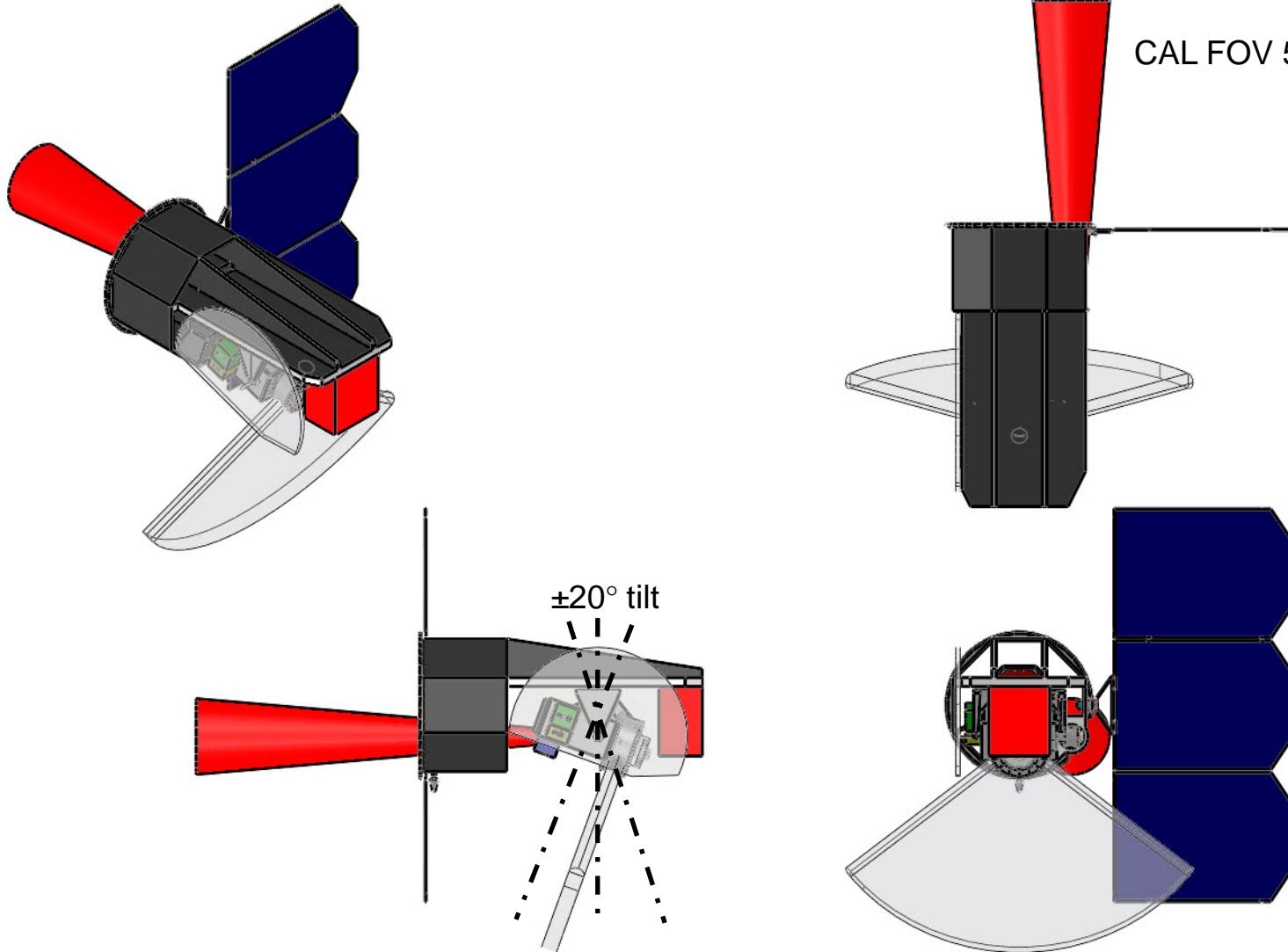
# Launch Configuration (Antares)

M i s s i o n   D e s i g n   L a b o r a t o r y



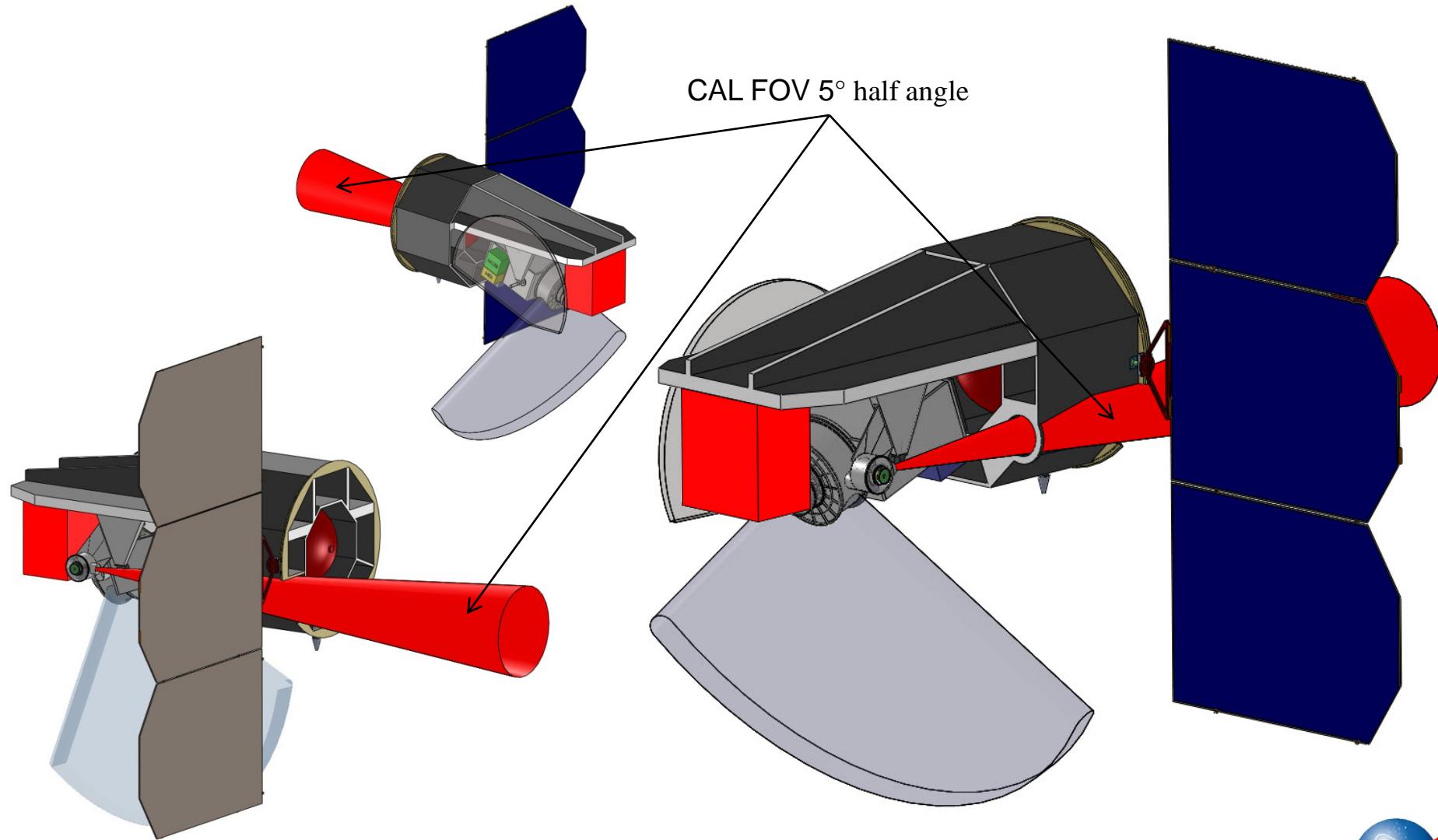
# Deployed Configuration

M i s s i o n   D e s i g n   L a b o r a t o r y



# Deployed Configuration (cont'd)

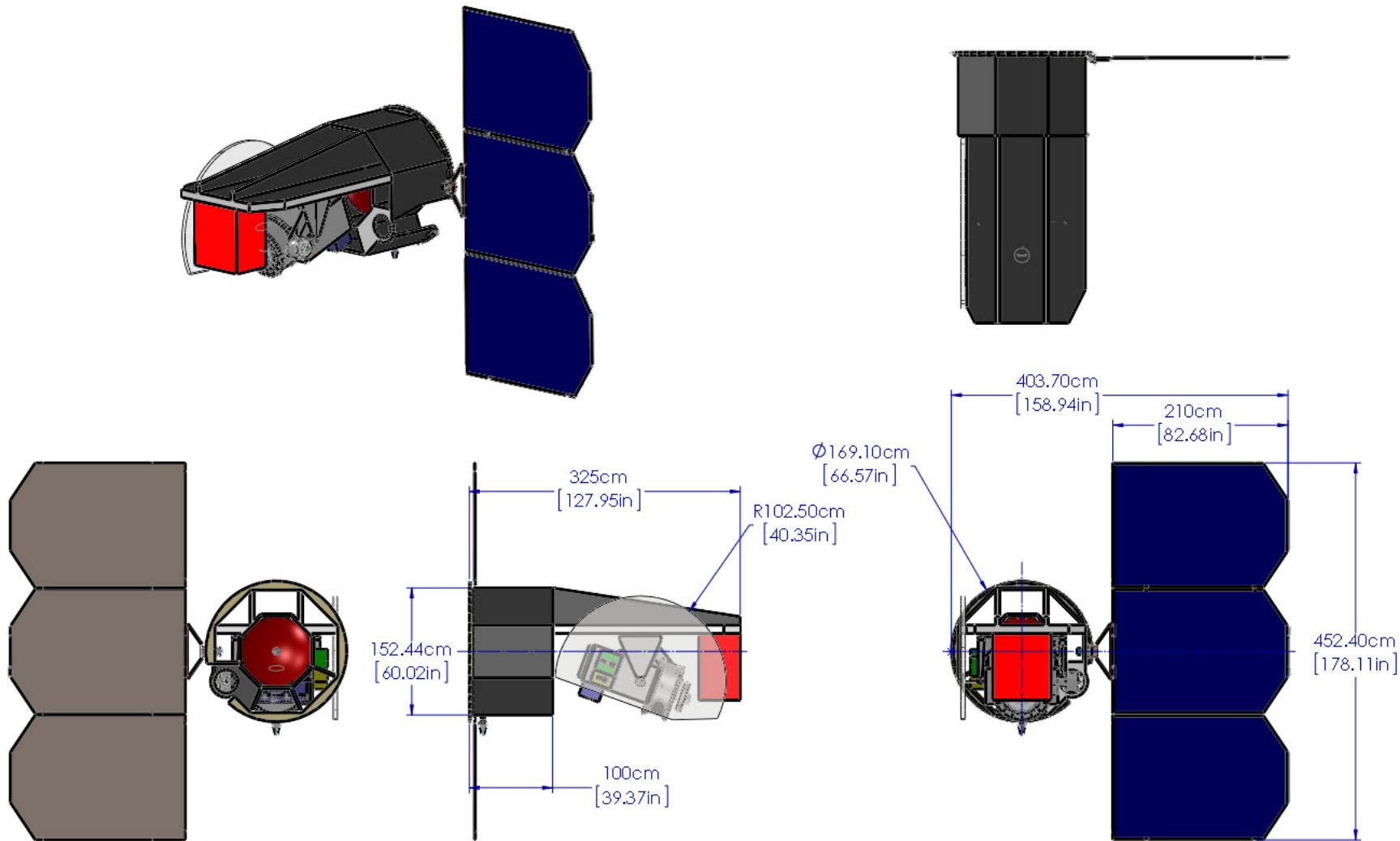
M I S S I O N   D E S I G N   L A B O R A T O R Y





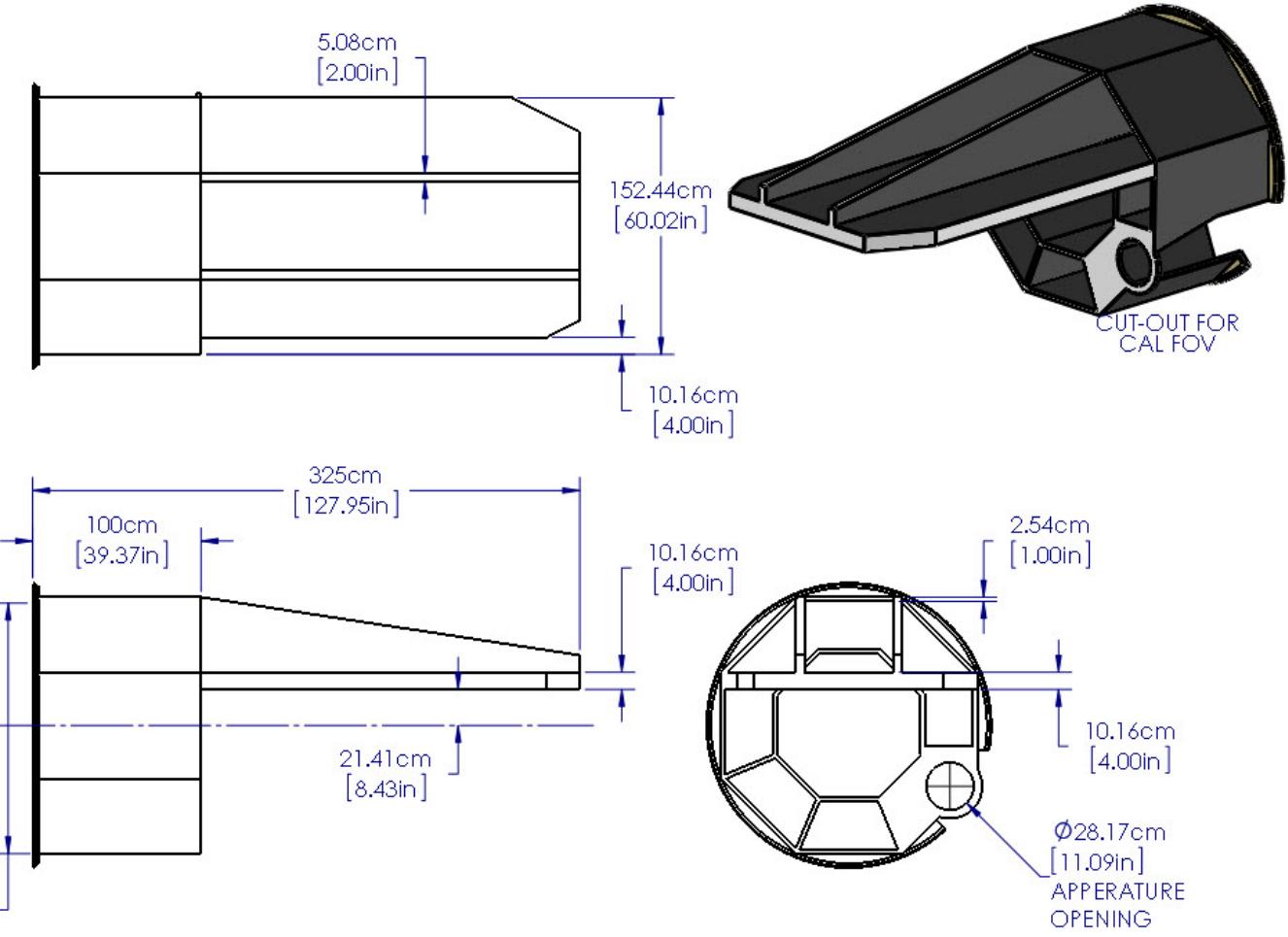
# Deployed Moldline

M i s s i o n   D e s i g n   L a b o r a t o r y



# Bus Structure

M i s s i o n   D e s i g n   L a b o r a t o r y





# Spacecraft Bus Mass Allocation

M I S S I O N   D E S I G N   L A B O R A T O R Y

Mission	PACE	Study Dates	5/14-18/2012			
Structural Component		Material	Mass Each	Quantity	Mass Total	
Experiment Related					0.00	
Bus Structure					104.3	
Strong Back	.0508 composite skin/al aly core honeycomb panel 10.16 thick	53.77	1	53.8		
strong back braces	.0508 composite skin/al aly core honeycomb panel 5.08 thick	5.68	2	11.4		
component panels	.0508 composite skin/al aly core honeycomb panel 2.54 thick	1.48	8	11.8		
cross supports	.0508 composite skin/ al aly core honeycomb paney 2.54 thick	3.14	3	9.4		
LV interface ring	al aly	8.25	1	8.3		
					0.0	
					0.0	
					0.0	
<b>secondary structure</b>			7.57	1	7.6	
<b>Fasteners</b>			2.04	1	2.0	
Solar Array mount,yoke,panels,mechanism					0.00	
Comm antenna,mast,mechanisms					0.00	
Payload Support Structures					11.12	
Separation System Ø 1666		Launch Vehicle side	6.78	1	6.78	
custom separation system (sepnuts)		SpaceCraft Side	3.51	1	3.51	
					0.00	
		secondary structure	0.82	1	0.82	
		Fasteners	0.22	1	0.22	
Counter weights	steel	2.29		SUB-TOTAL	115.59	
		TOTAL STRUCTURAL COMPONENTS			115.59	

115.59                          Actual structural mass as % of dry mass = 14.4%

Payload Mass (given)	361.0
OCE	301.0
Polarimeter	60.0

S/C dry mass (from Systems Engineer)
801.01

