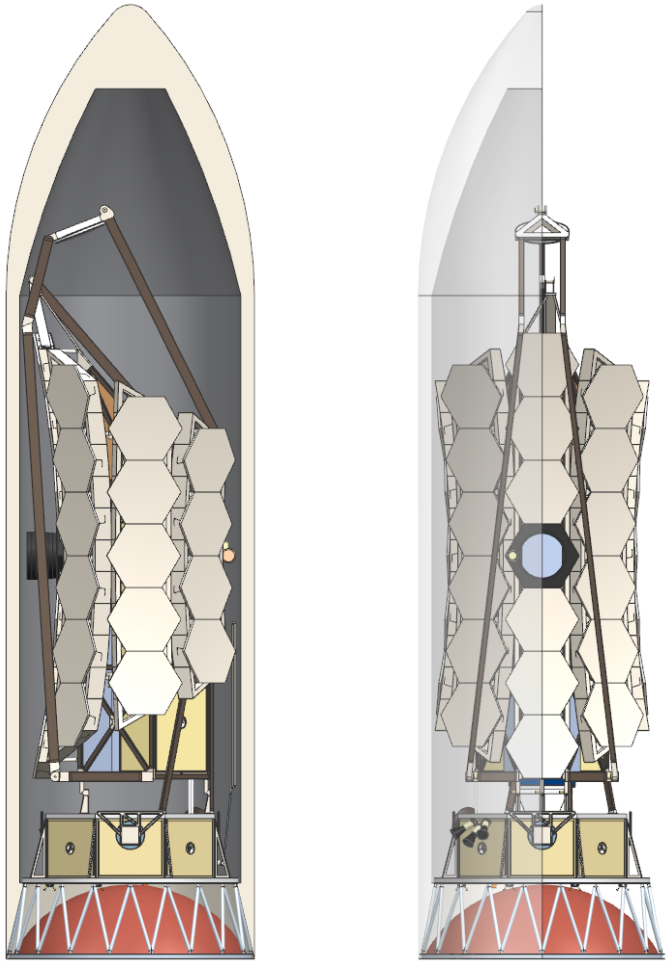
ATLAST 9.2m
Stowed in Existing Fairing Volume
(Delta IVH, SLS Block 1, Falcon 9)



Highly leverages JWST deployments

- Secondary
- Wings (6 vs 2)

Notional 9.2 m Stability Architecture

Deployed Configuration

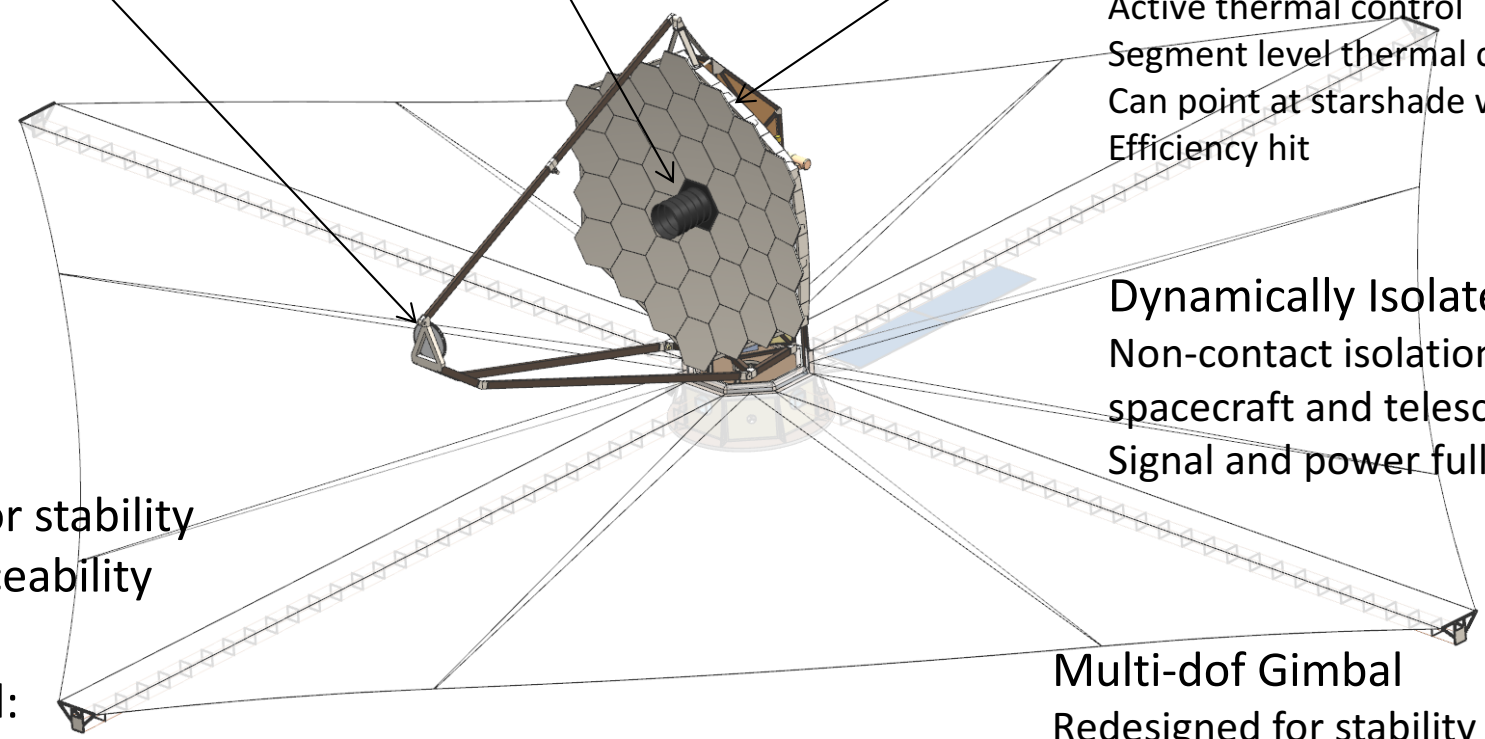
Zero Q, Zero Disturbance

36 JWST Size Segments
Glass or SiC
Active or Rigid

Actively controlled SM
Metrology to SI
.5nm..5nrad
Metrology loop/active hexpod

Deployed Baffle

Thermal Stability:
Primary Mirror only views deep space
Active thermal control
Segment level thermal control
Can point at starshade with stabilitization
Efficiency hit



Dynamically Isolated from SC
Non-contact isolation between spacecraft and telescope
Signal and power fully isolated

L2 orbit for stability and serviceability

Sunshield:
3-4 layer, constant angle to sun,
Approximately 100K, stable sink, low delta Q to PM with pointing
Sunshield deployed from below using 4 booms
Shown transparent for visualization

Multi-dof Gimbal
Redesigned for stability
Allows pitch
Observatory rolled
Can Yaw with additional mechanism
+- 90 degree Field of Regard

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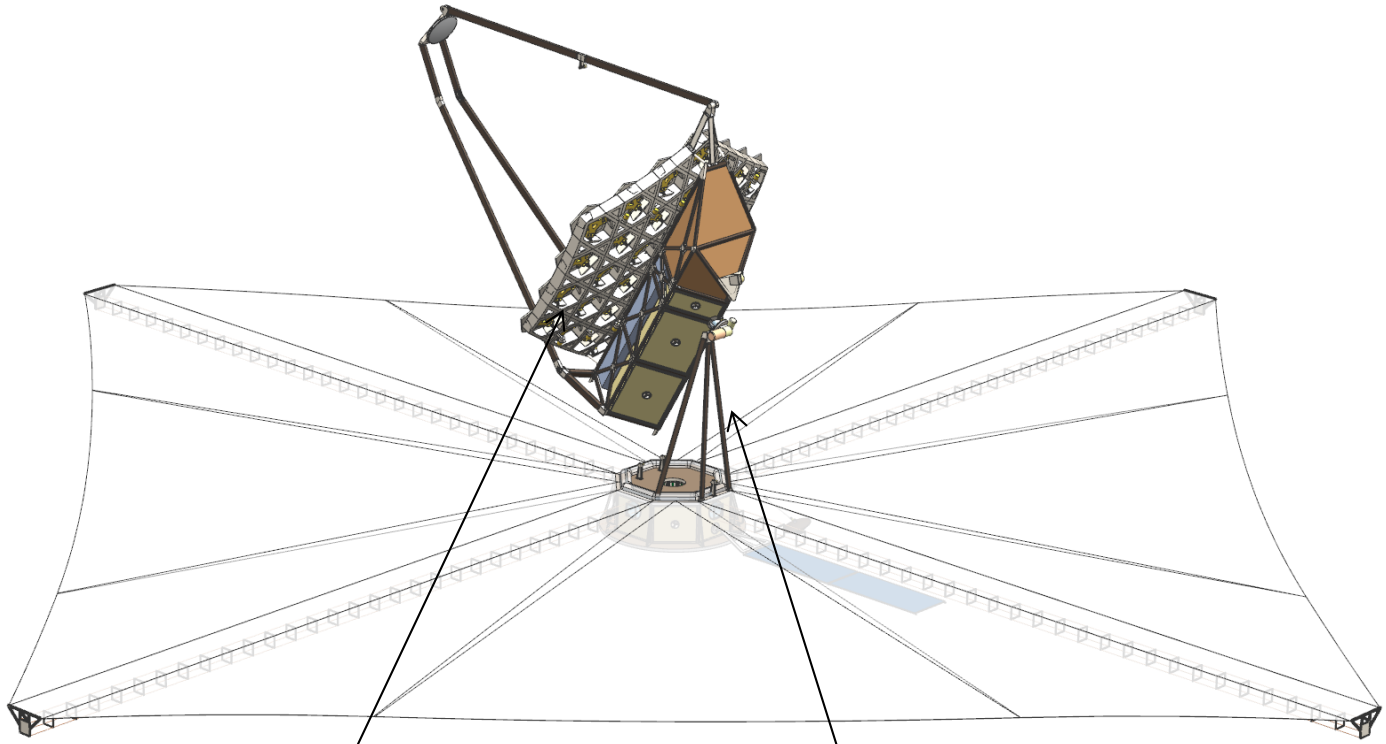
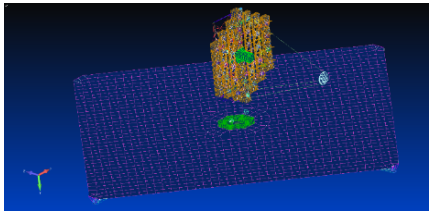
Recent architecture improvements



New backplane architecture
-Stiffer
-Matches JWST first mode and fits in volume
-Based on proven manufacturing methods
- Mass compatible with even Delta IVH budgets

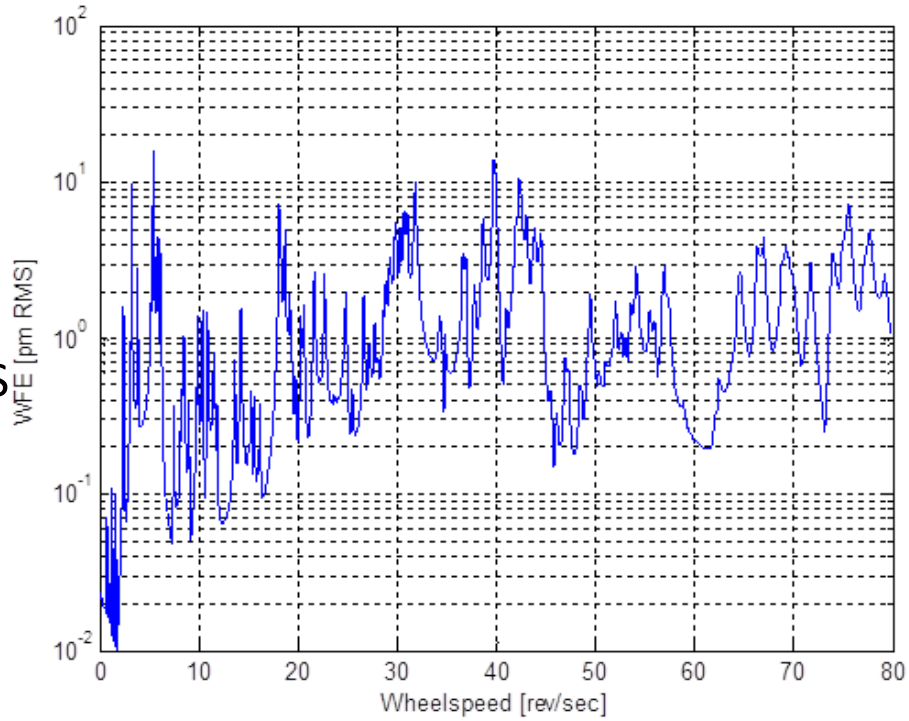
More stable Gimbal
- Stiffer
- Allows pitch
- Isolation at interface to ISIM
- Can add Yaw mechanism between isolation and gimbal if speckle removal needed

Integrated Model PM WFE Preliminary Results



Initial integrated modeling indicates that 10pm can be achieved over a reasonable bandpass of reaction wheel speeds with a state of the art non-contact isolation system
- Doesn't include Model Uncertainty Factor but requirement is conservative for jitter

Early results did not include gimbal and SMSS
- Iterating gimbal and SMSS design first
- Will include later this year

A key question that need technology study is whether models are accurate to these levels and whether composite structure has the stability

Requires new metrology tools (high speed spatial speckle interferometer)