Arrangements applied to the Mars Science Lab Camera Mast

Scott McGinley
Jet Propulsion Laboratory
California Institute of Technology

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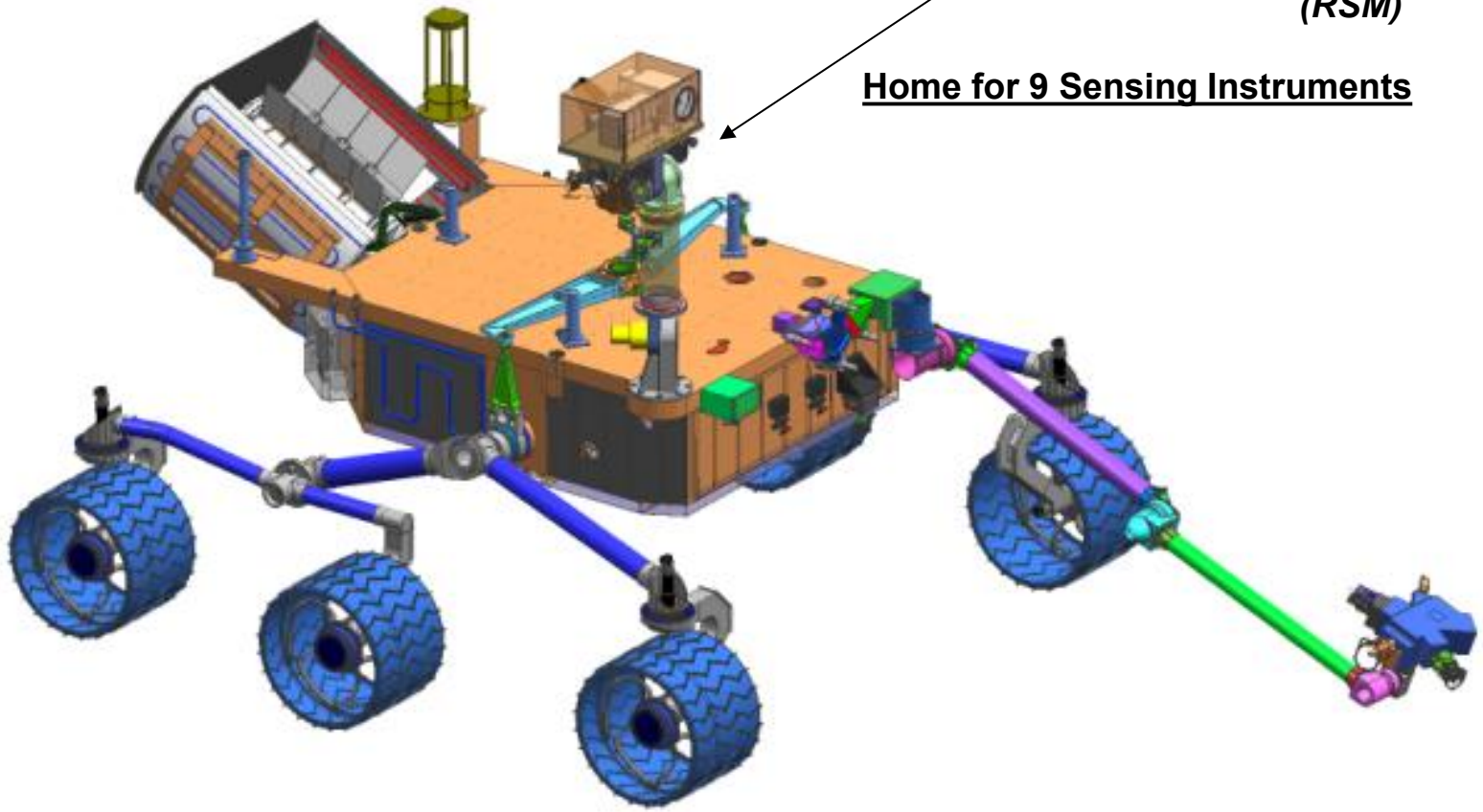
Remote Sensing Mast

(RSM)

Home for 9 Sensing Instruments



Very Early Rover Configuration

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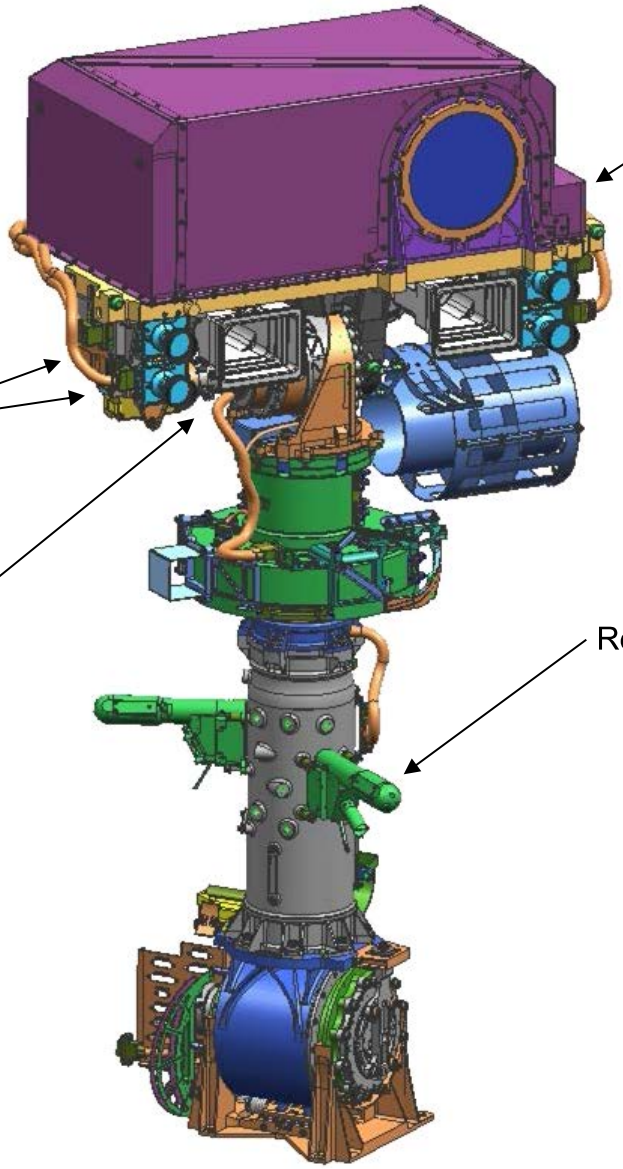

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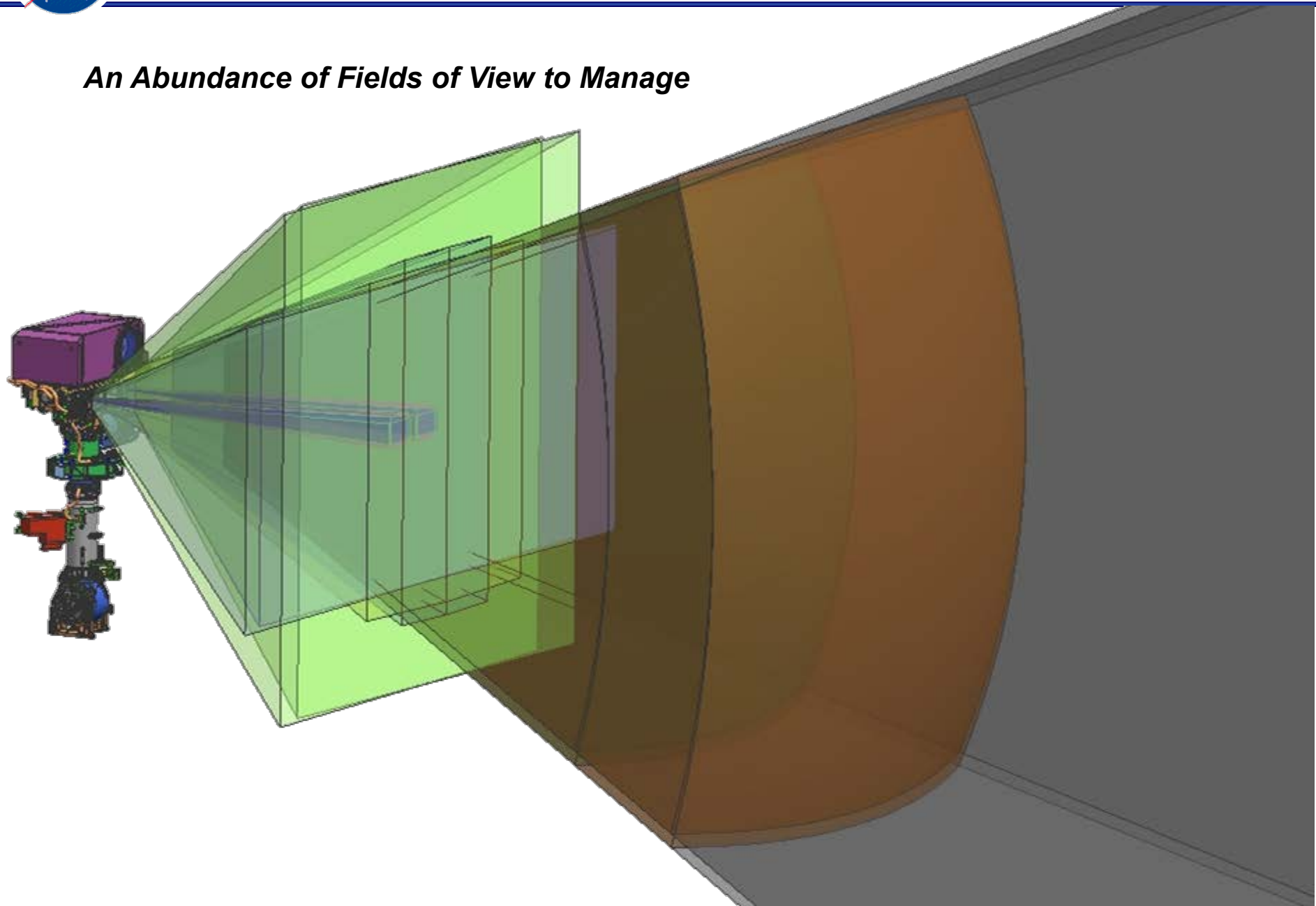
An Abundance of Fields of View to Manage



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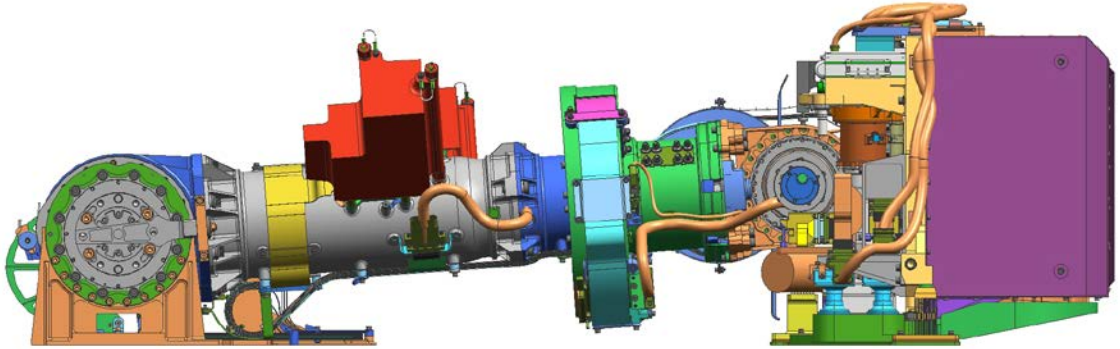

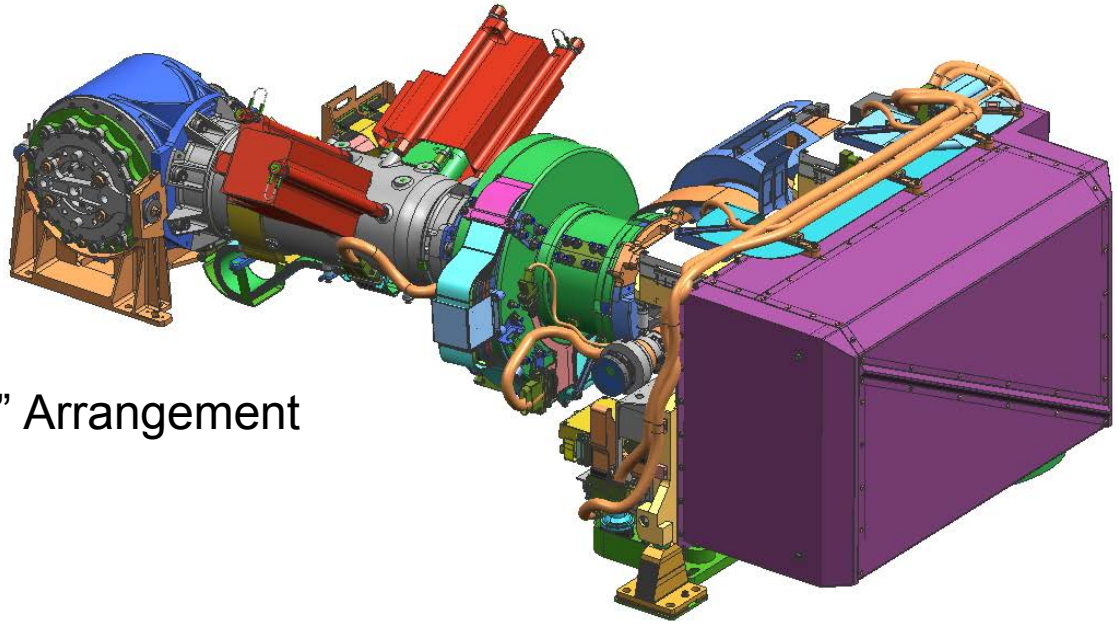

Mast In “Stowed” Arrangement

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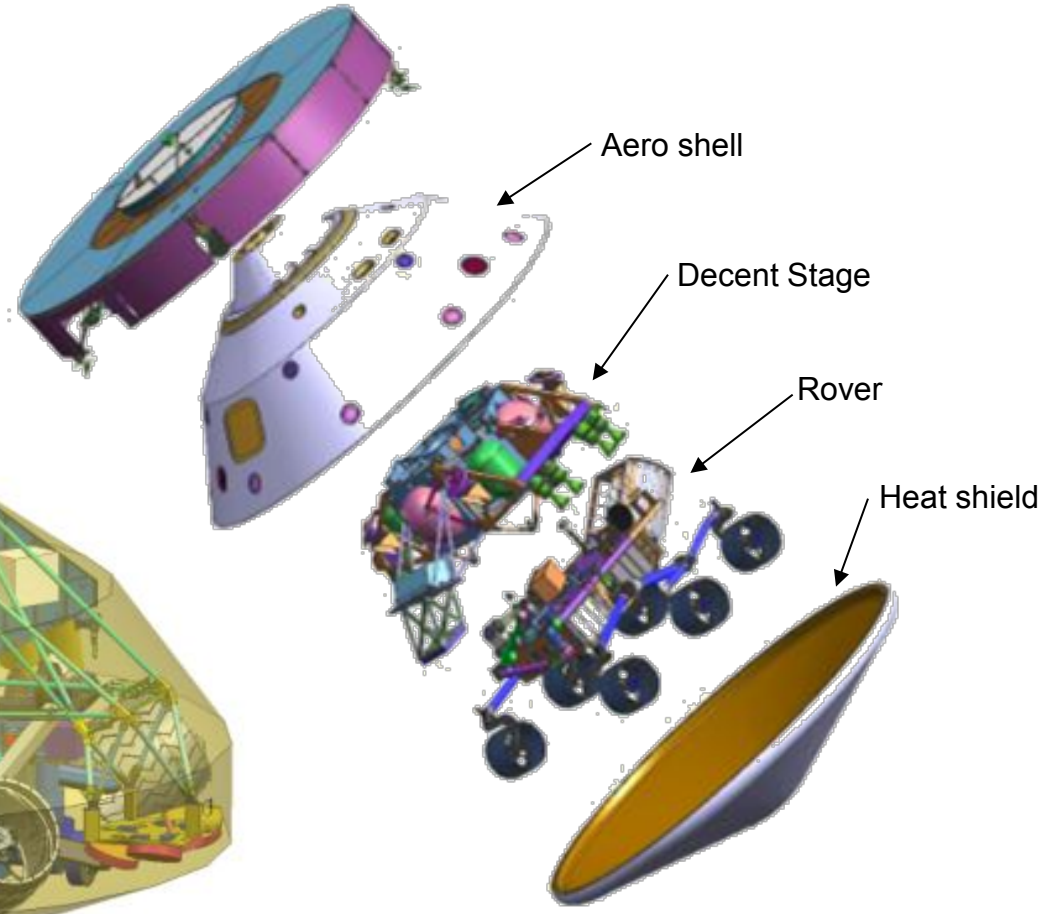

Packaged for Flight

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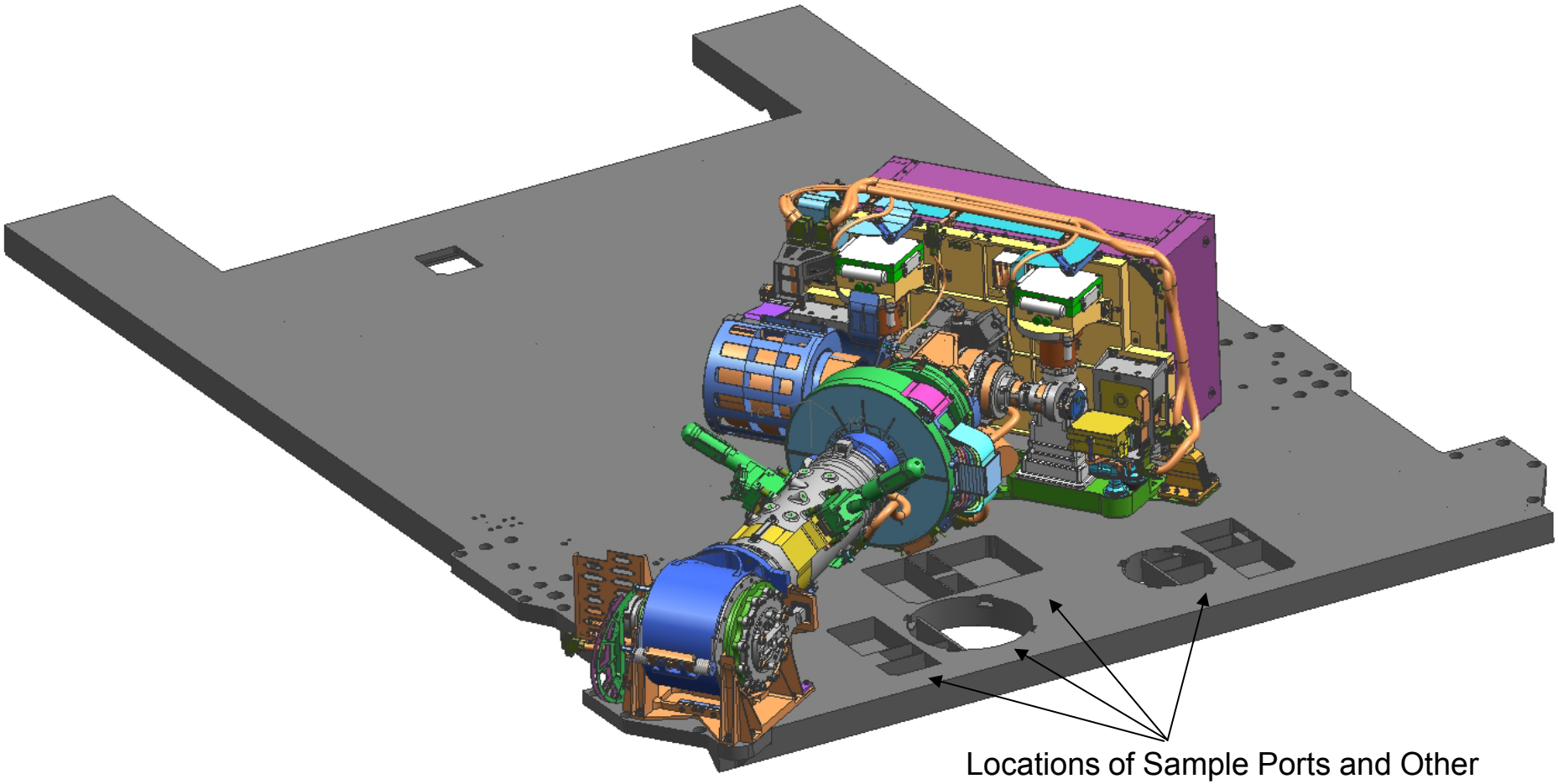

Locations of Sample Ports and Other Instruments on the Rover Deck

Mast Stowed and Restrained to the Top Deck of the Rover

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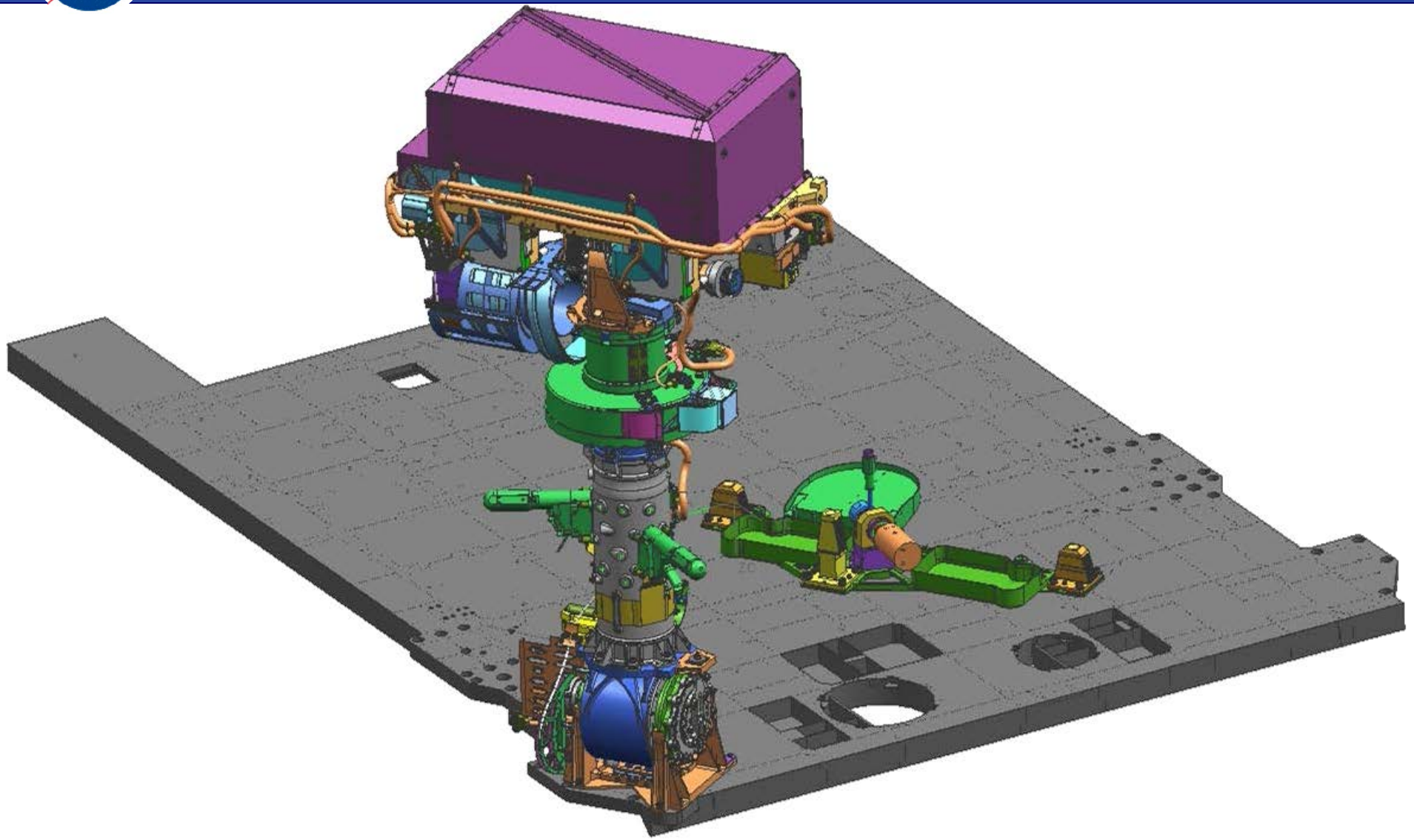

Mast “Up” In Assembled Position

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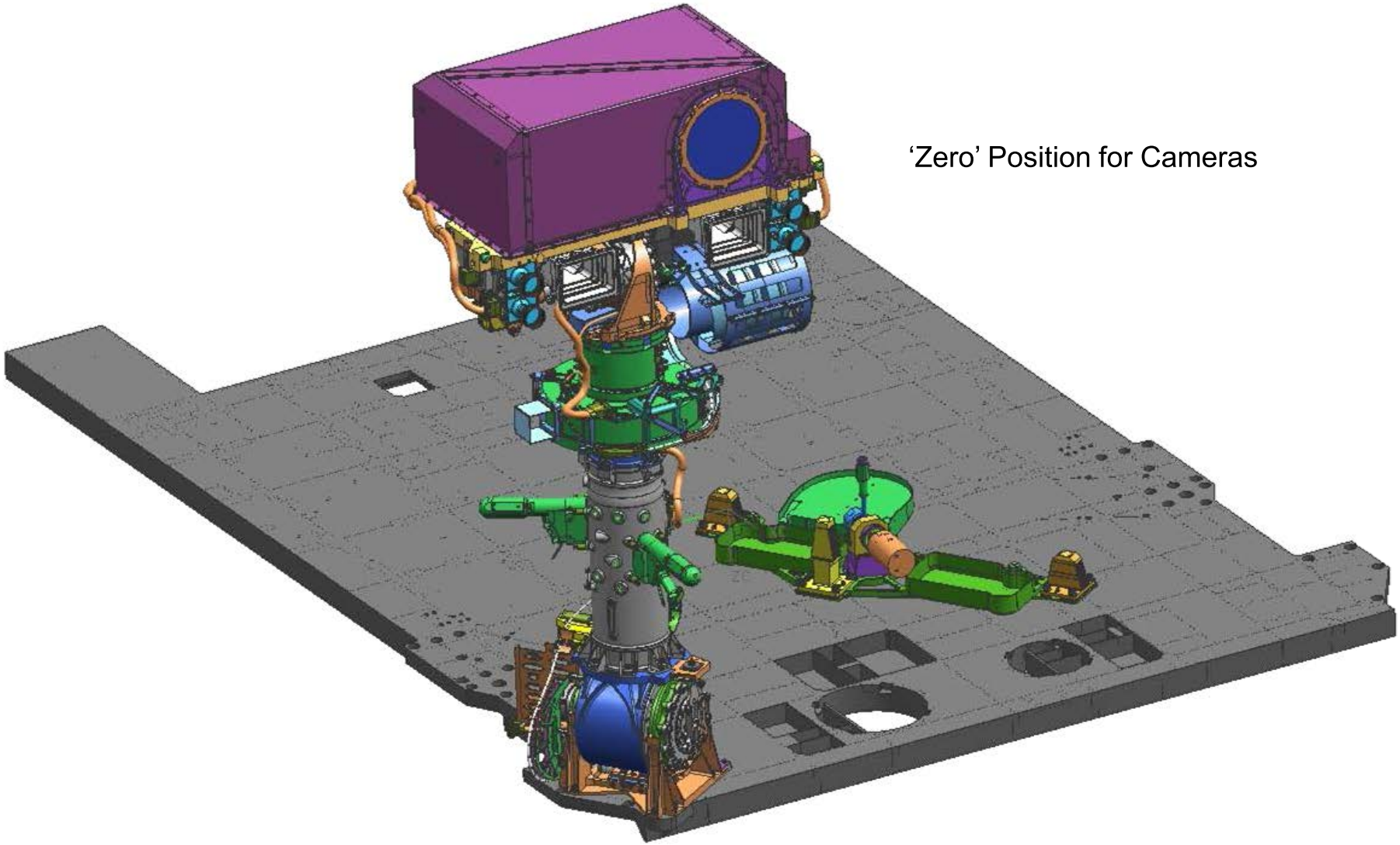

‘Zero’ Position for Cameras

Mast “Deployed” and Looking Forward

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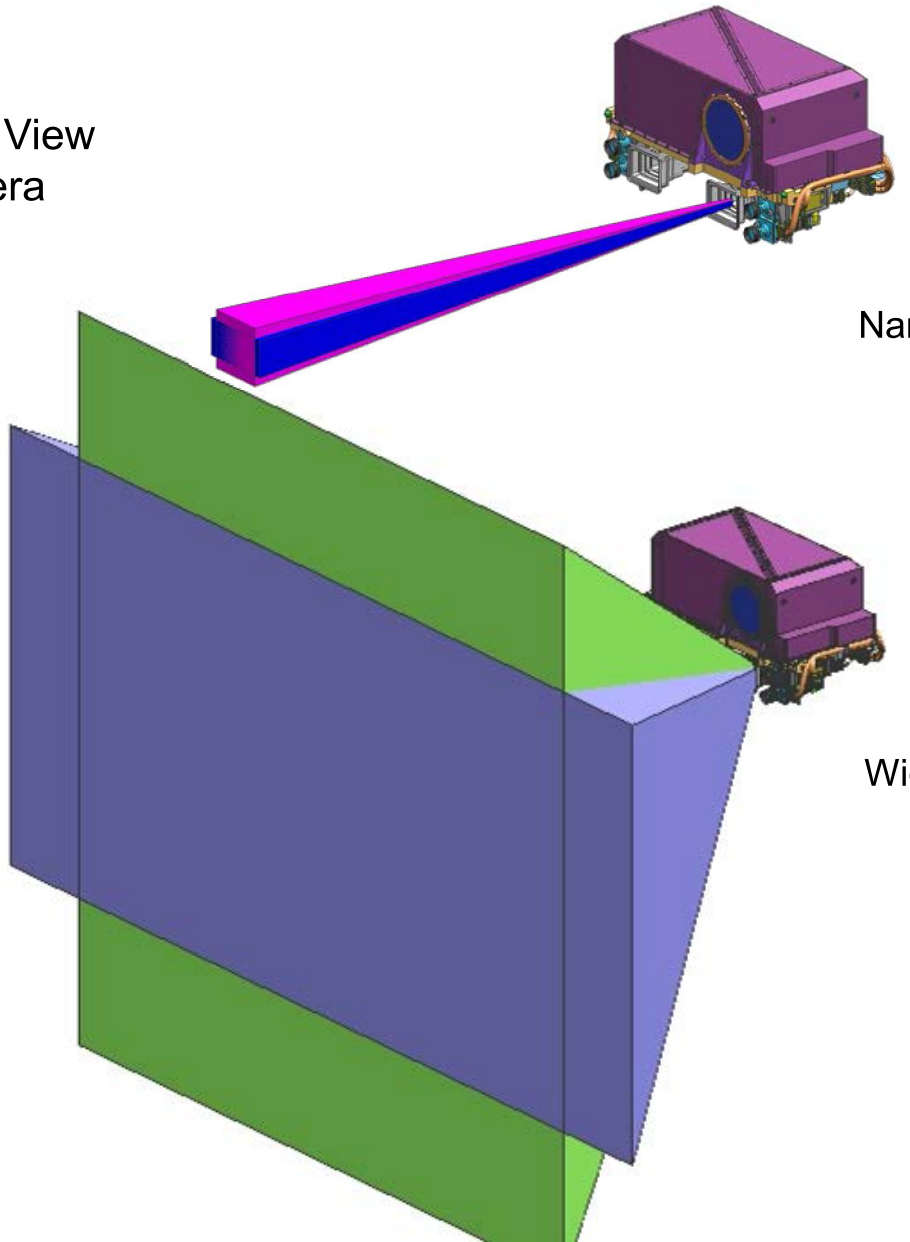
Several Fields of View
for Each Camera



Narrow Fields of view

Wide Fields of View

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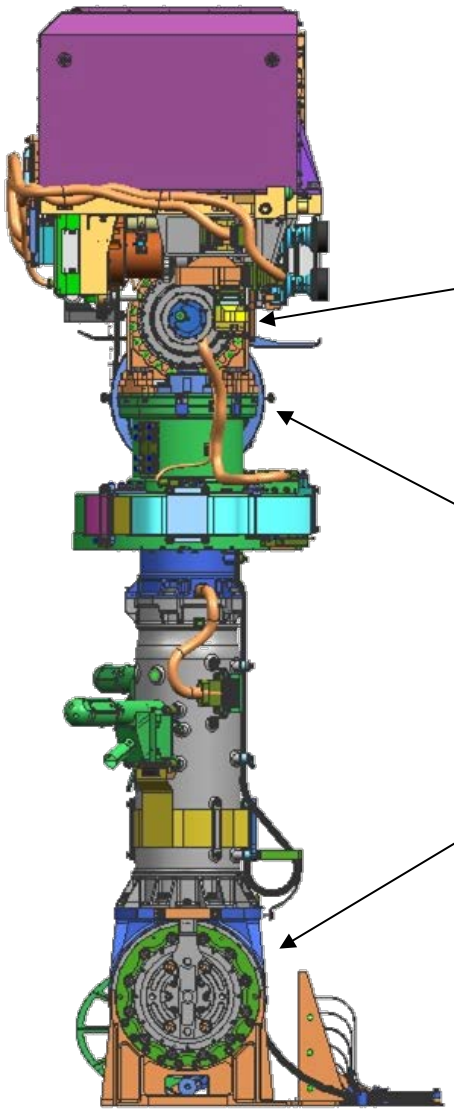

Elevation Joint

(Moves from +90 deg to -90 deg)

Azimuth Joint

(Moves from over +180 deg to more than -180 deg)

Deployment Joint

(Ether Stowed or Deployed and Locked)

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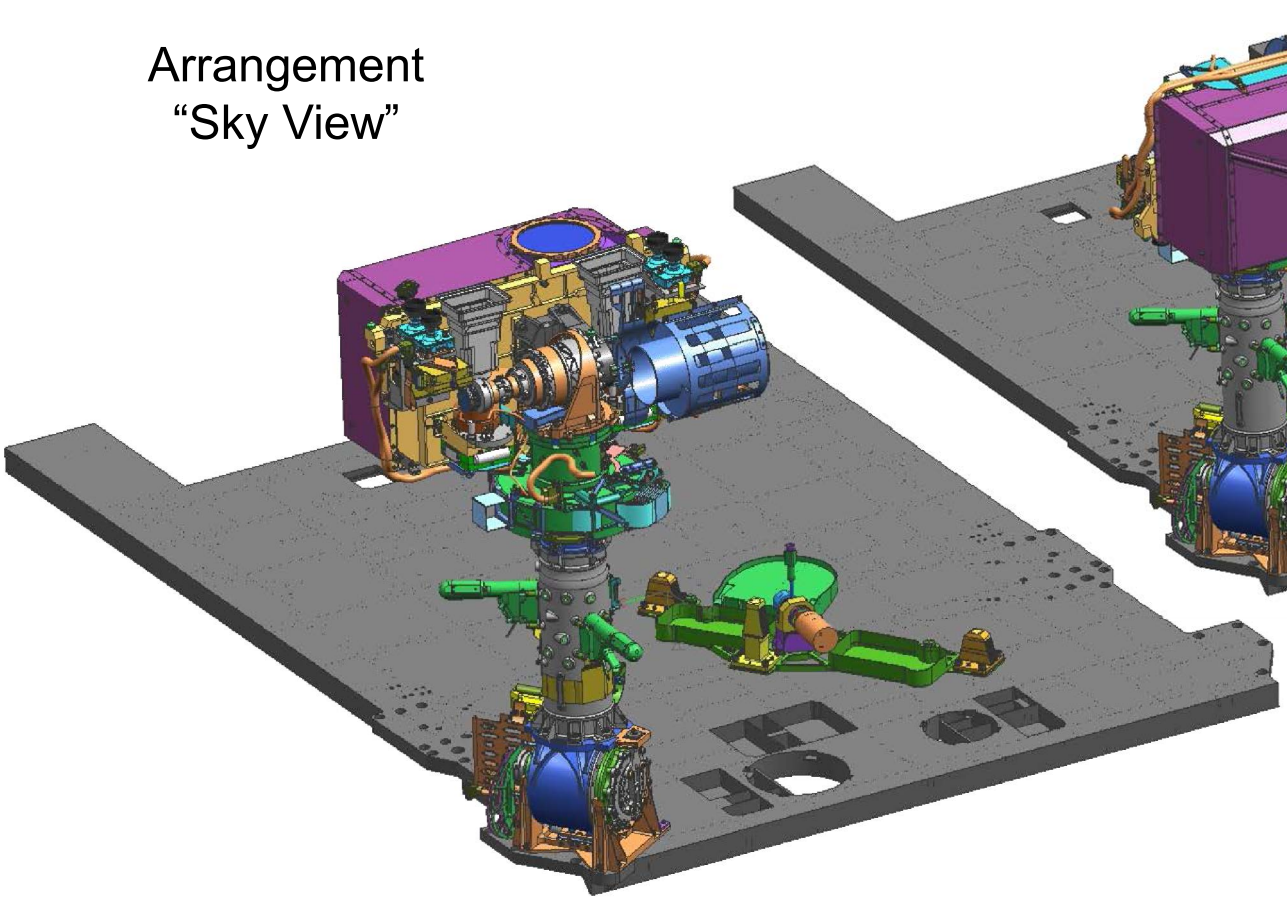
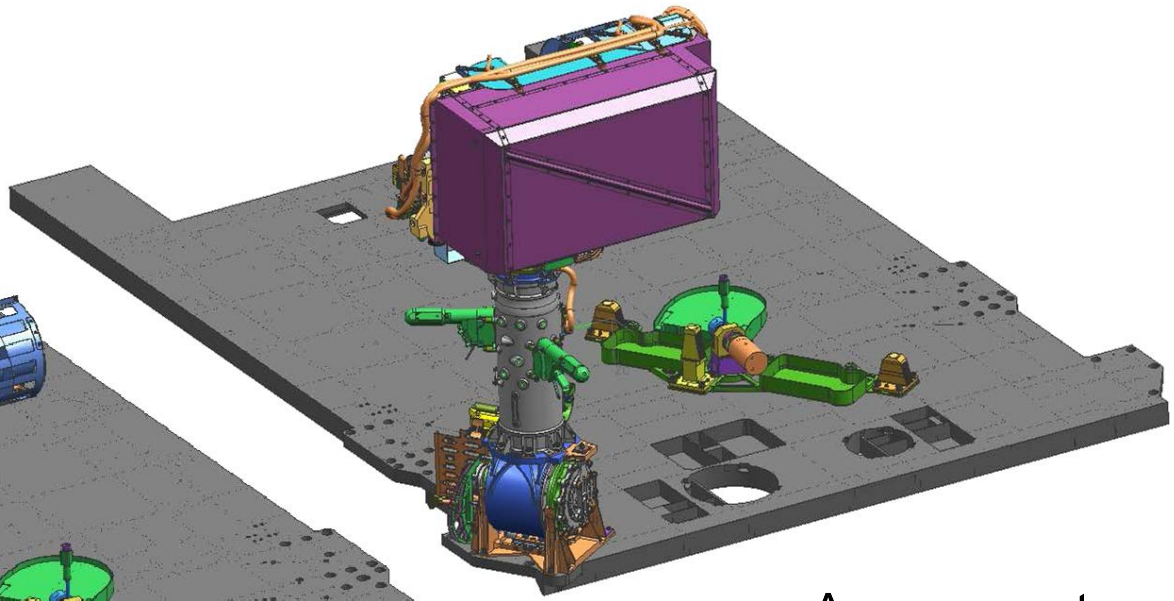
Arrangement
"Sky View"





Arrangement
"Sleep"

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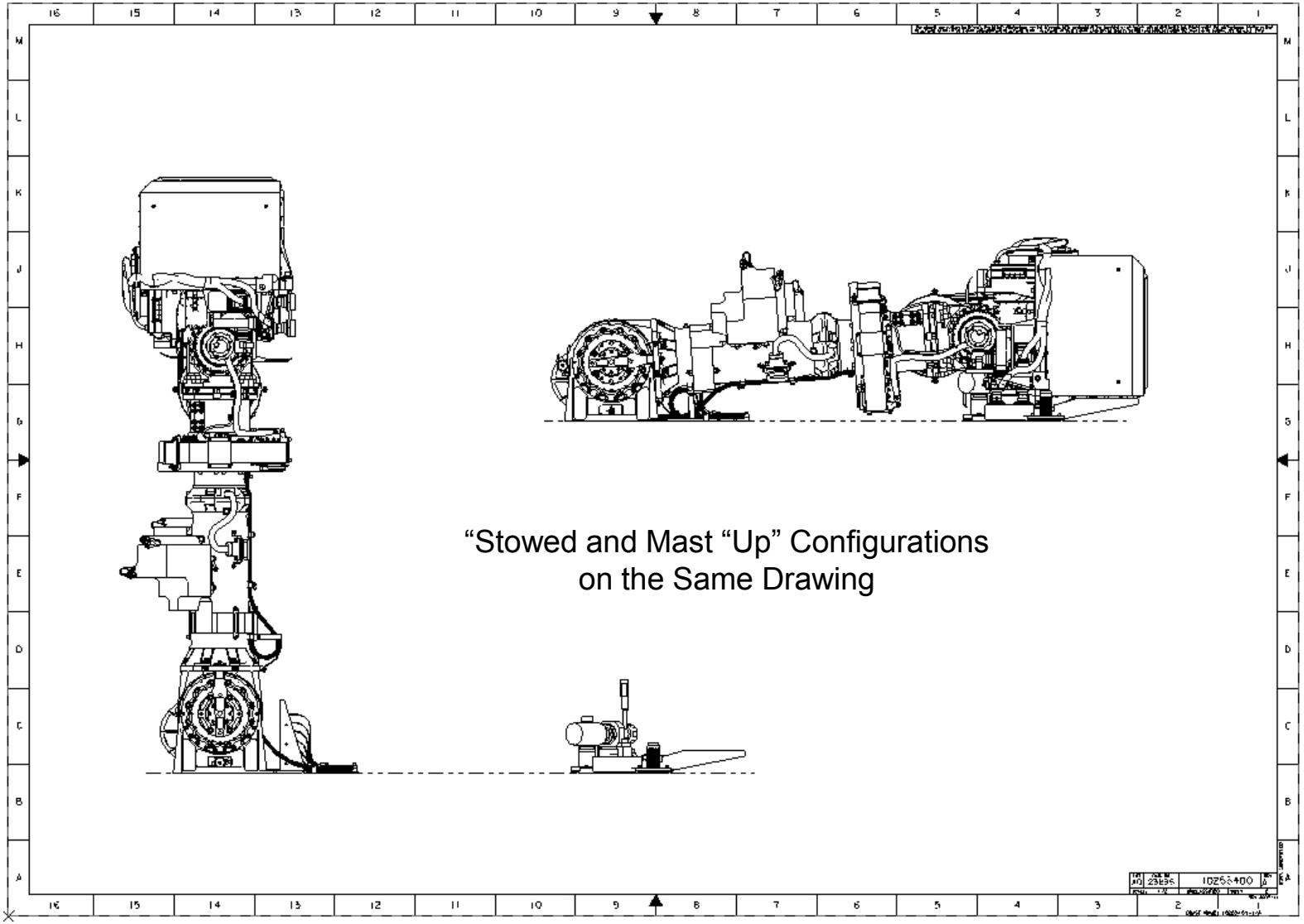

Assembly View Management

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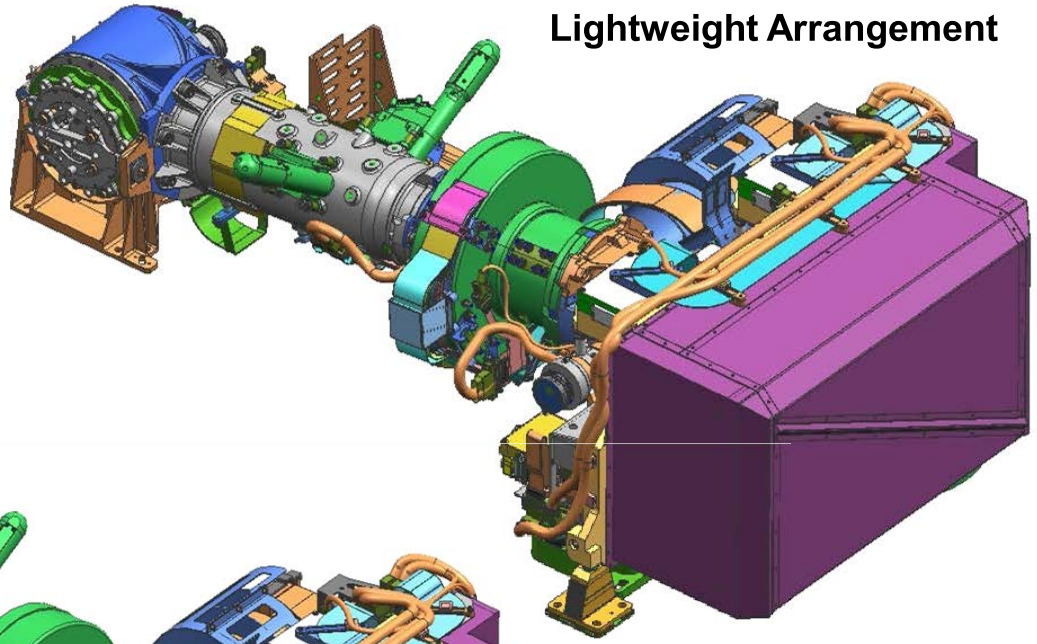
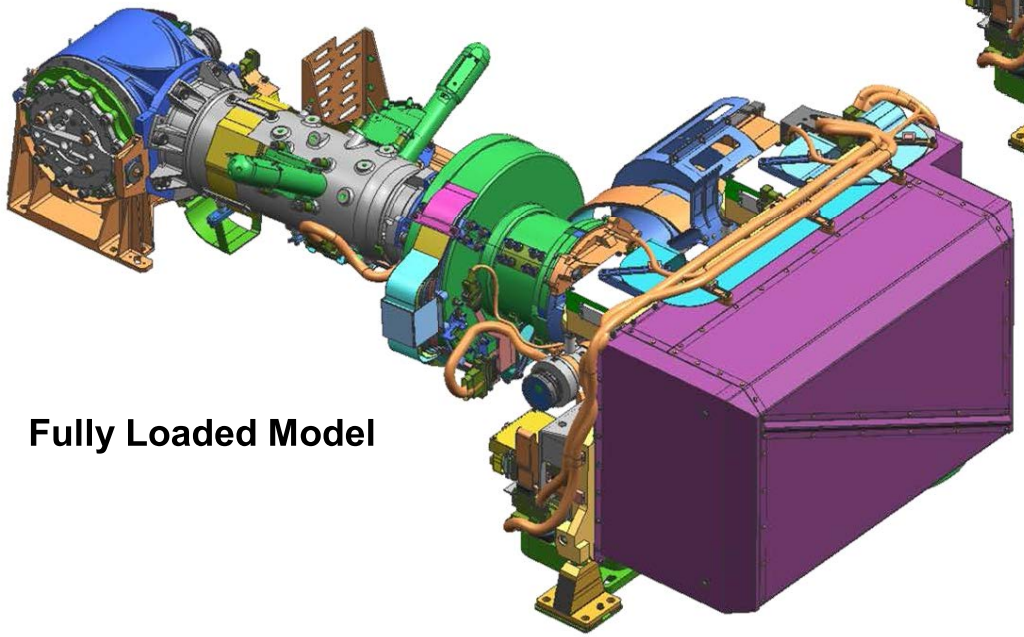
Eye Test

Lightweight Arrangement





Fully Loaded Model

Can You Pick out 1,000 Differences Between These Two Pictures

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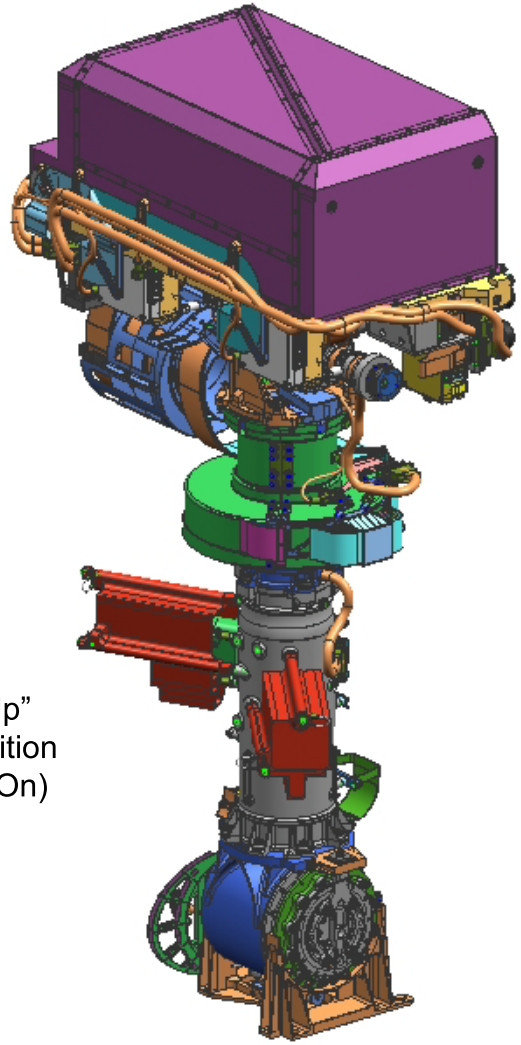
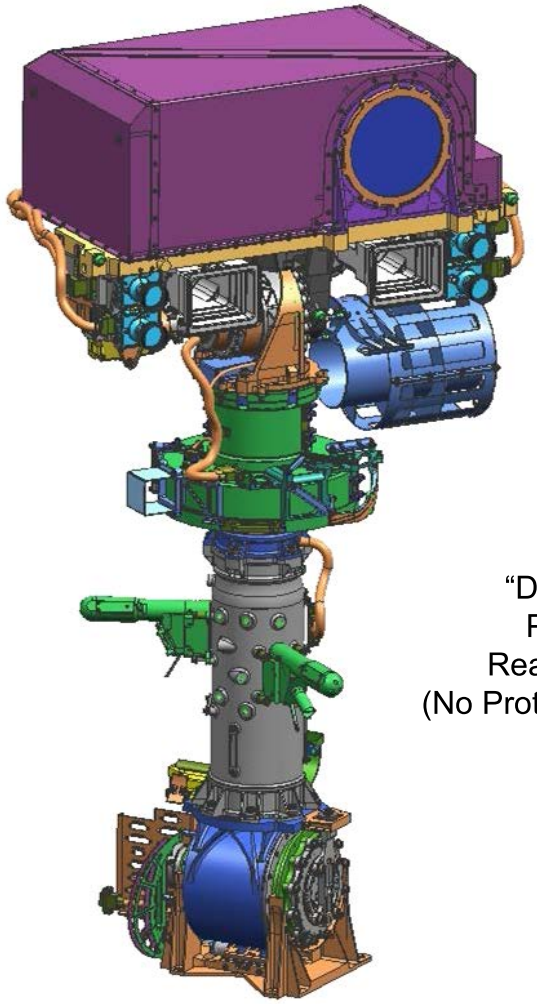
‘Remove Before Flight’ Hardware



Mast “Up”
Build Position
(Covers On)



“Deployed”
Position
Ready to Roll
(No Protective Covers)

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So we solved:

- Model configuration
- Clearance studies
- Field of View studies
- Drawing view management
- Suppression for light weighting the assembly model
- Suppression for cable management
- Suppression for ‘Remove before Flight’ covers

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The

Beginning

marsprogram.jpl.nasa.gov