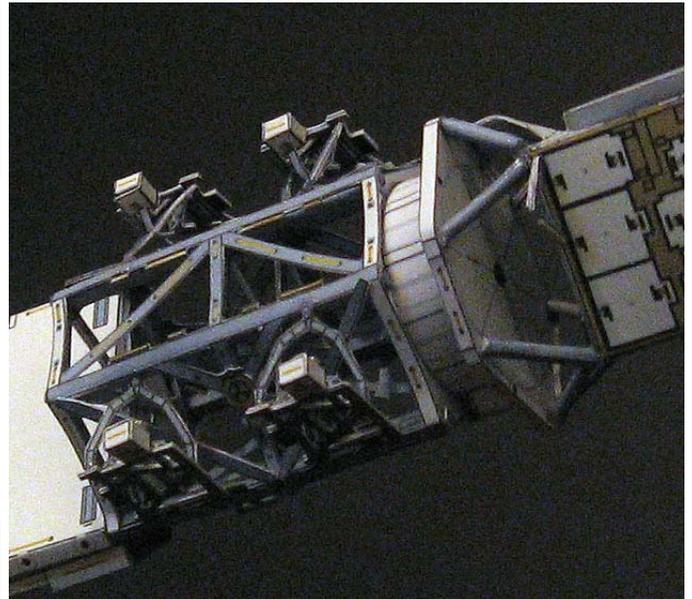
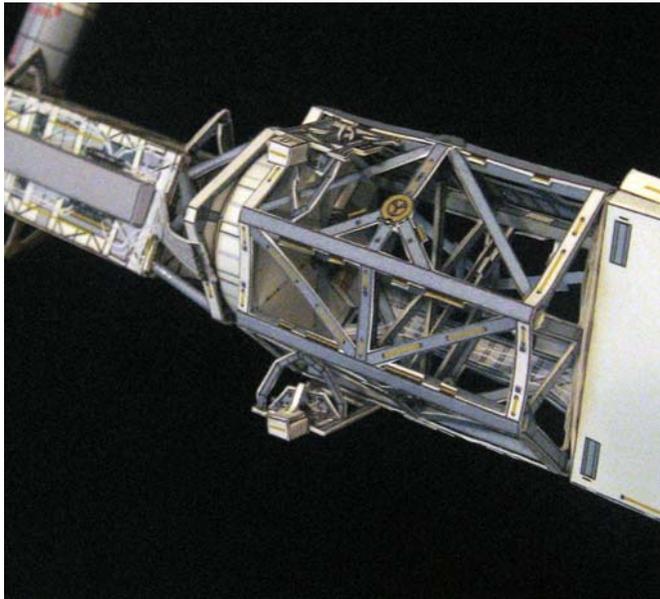




© 2010

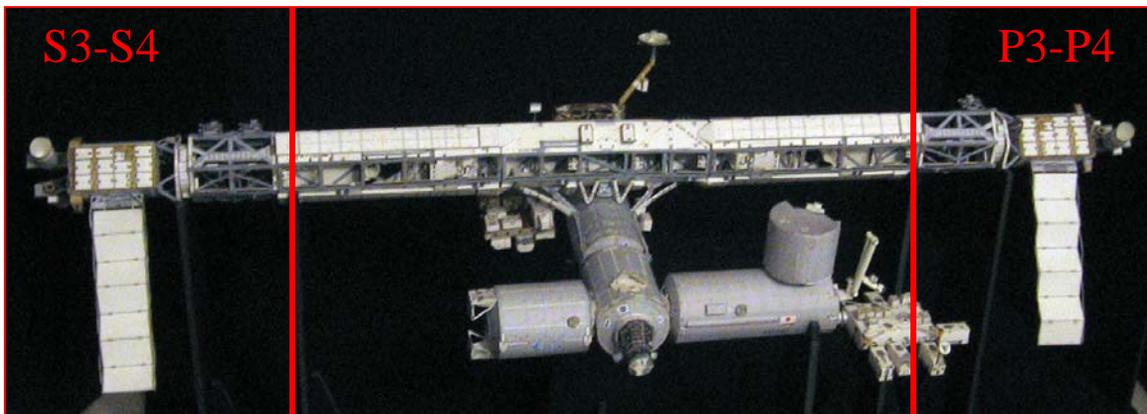
# STS-115 / STS-117 Assembly Instructions (P3-P4 / S3-S4 trusses)



AXM site is proud to release these truss elements as a combo kit. These models are a mirror image of one another with small differences. The assembly steps shown on this manual are the same for both 1:144 and 1:100 scale models.

A special thanks to **Lucas Underwood** (USA) for his SARJ design and **Chris Davies** "Mobius" (New Zealand) for his valuable engineering tips to build these trusses.

## Overview of the P3-P4 / S3-S4 trusses



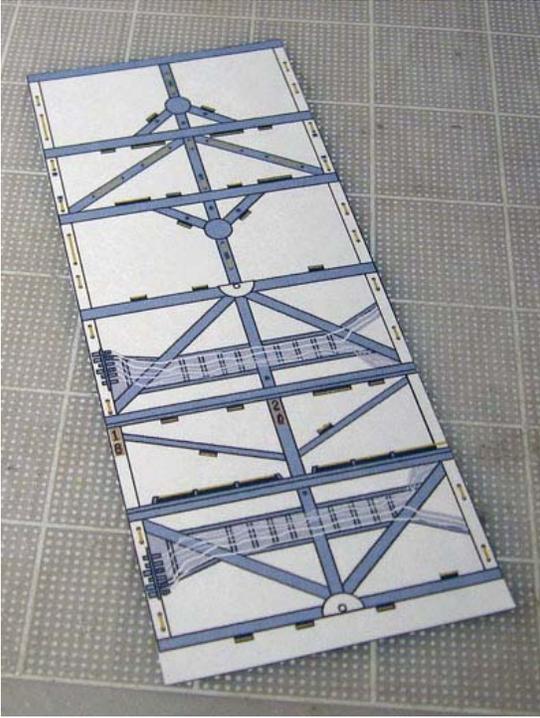
The photo shows the location and orientation of these models on the AXM ISS. Each truss has 2 parts, a 3 and 4 components. If the truss is on the **Port side** of the station the element is called **P3-P4**, and if the truss is on the **Starboard side**, then is called **S3-S4**.

The major difference between these 2 trusses is the number of external payload attachment points on them:

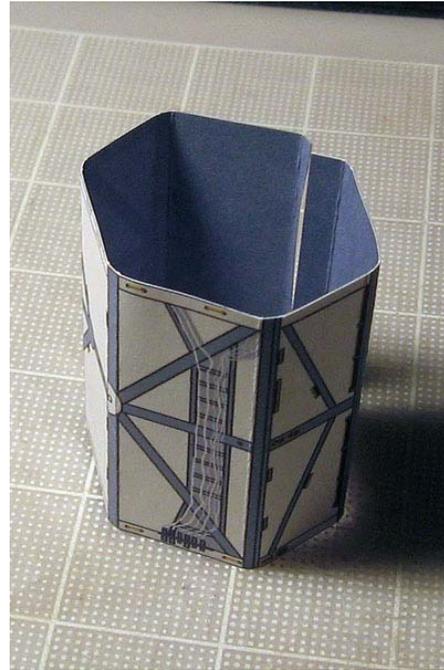
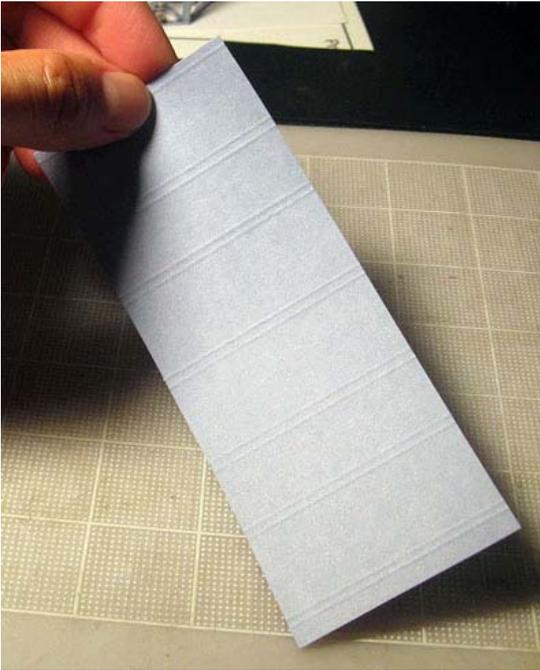
- P3-P4 has 2 attachment systems called UCCAS on the P3 segment.
- S3-S4 has 4 attachment systems called PAS on the S3 segment.

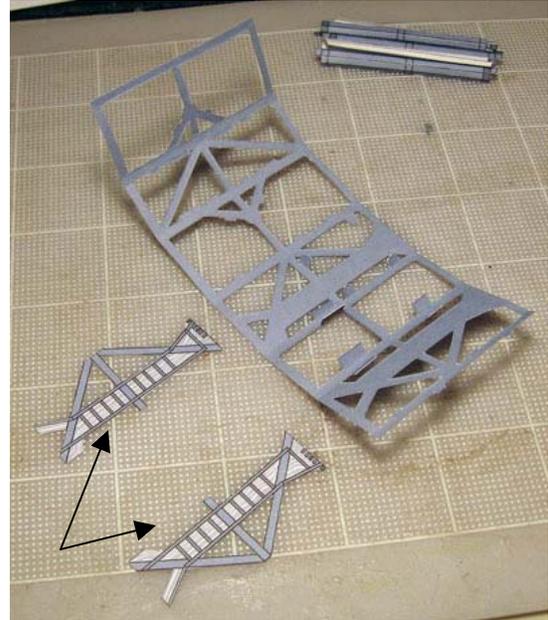
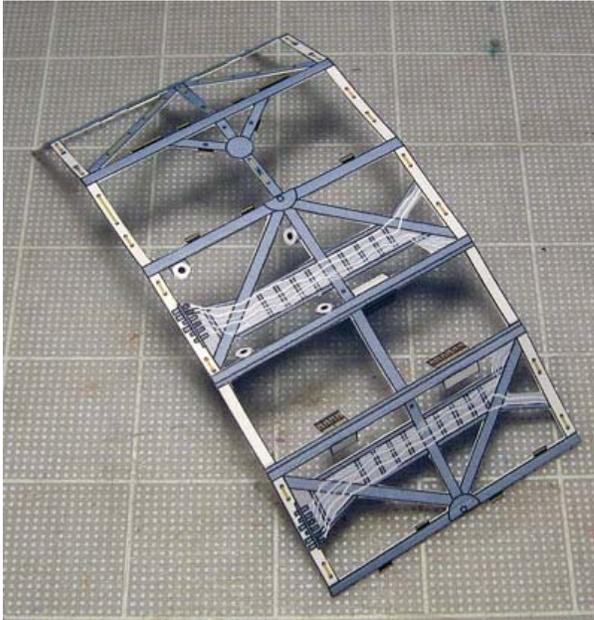
The S4 and P4 segments are box like sections where the batteries, radiators and solar array canisters are located.

**Building the S3 or P3 segments.**

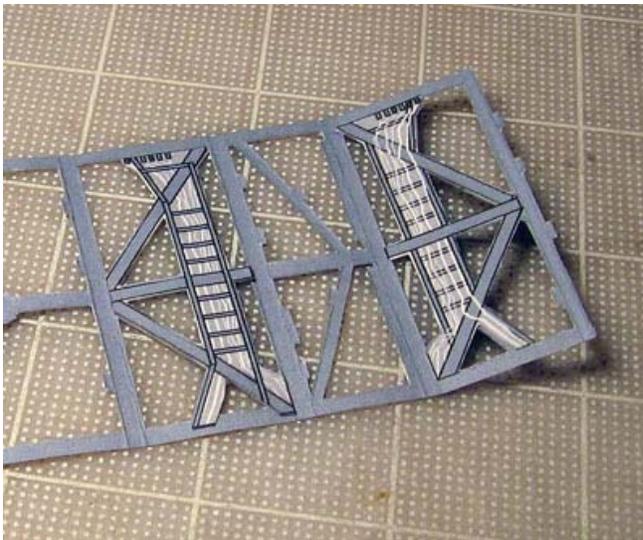


TOP row: front and back of the same part. Before cutting the open spaces is very important to score over the lines so folding process can be done easily.

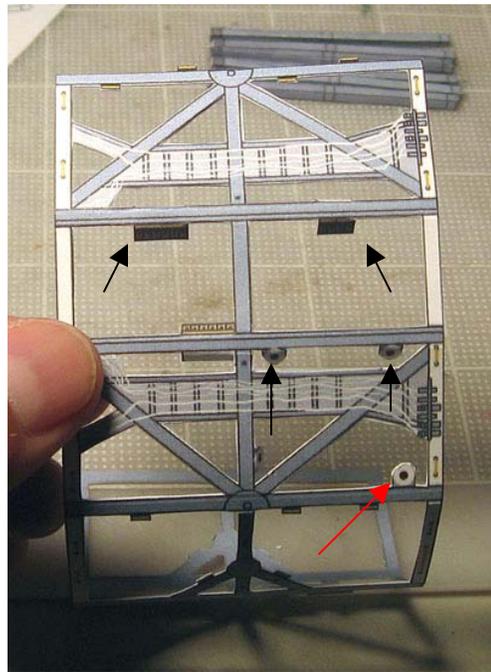




After cutting out all the open spaces, glue these 2 parts to the backside (arrows).



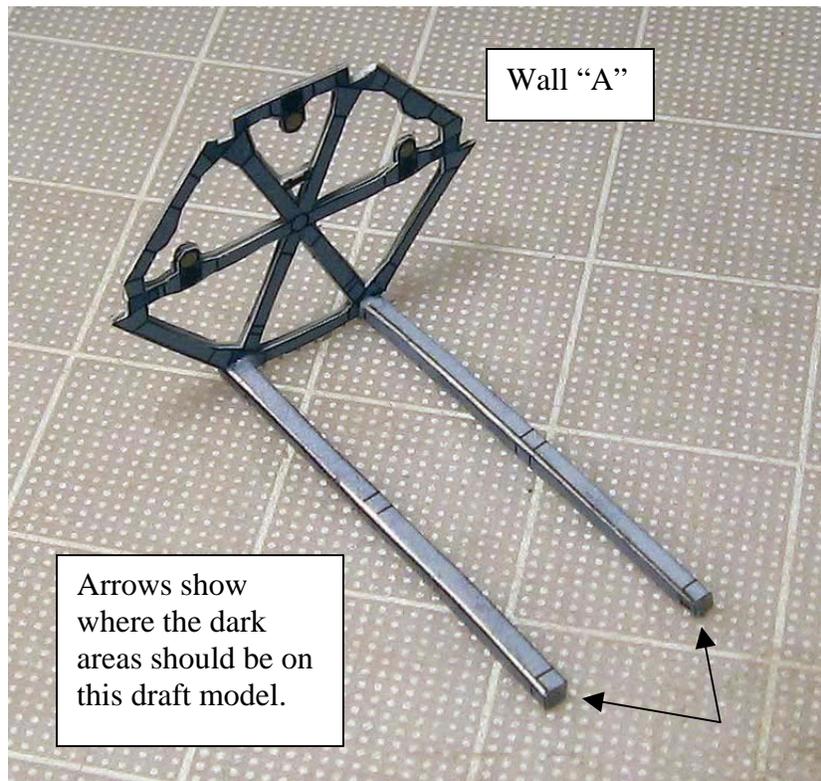
These arrows point to tabs that represent “boxes” and visual targets on the truss. These need to be folded inwards. Few of the visual targets are not folded like the one shown by the red arrow. It applies to the opposite truss, too.

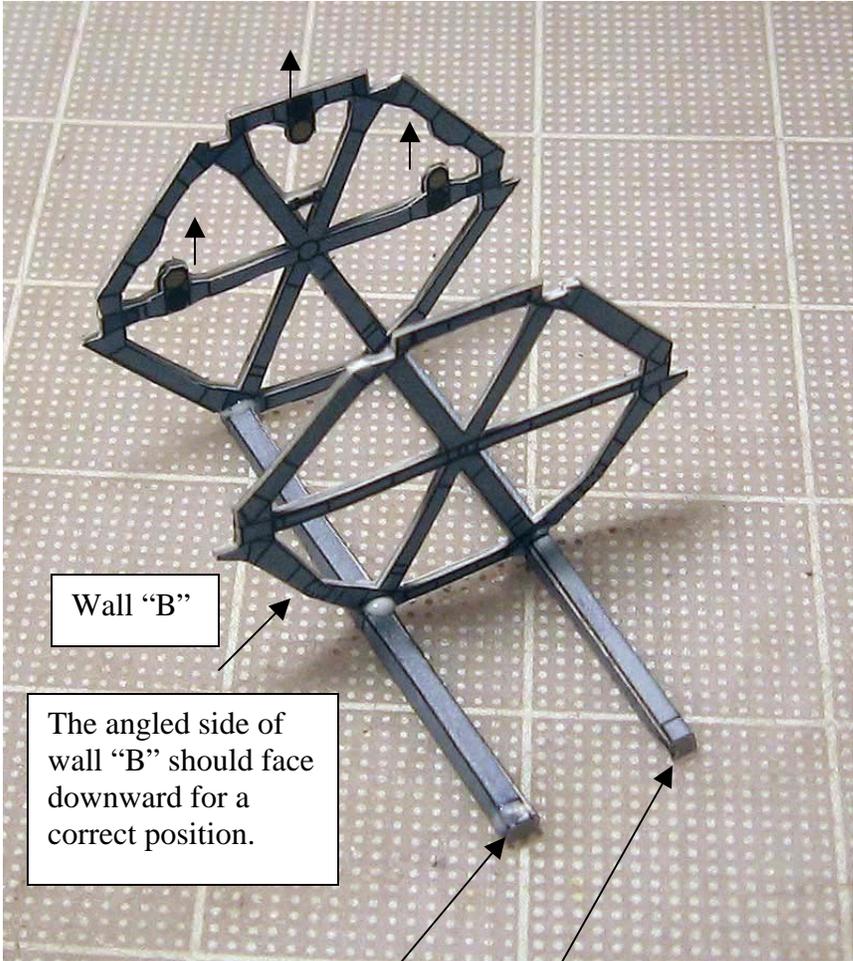




These are samples of the truss beams that will join the truss walls.  
Before cutting them out, score these parts so the folding process can be done easily.  
Note that each beam has a darker end and this is where the “C” wall is glued.

### Putting together beams and walls



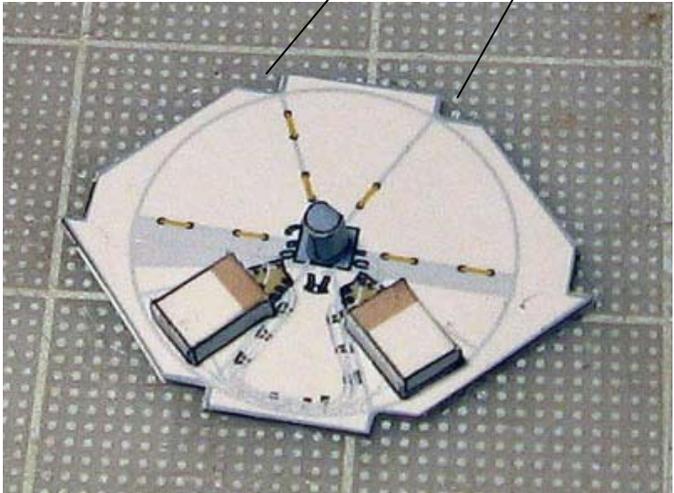


Wall "B"

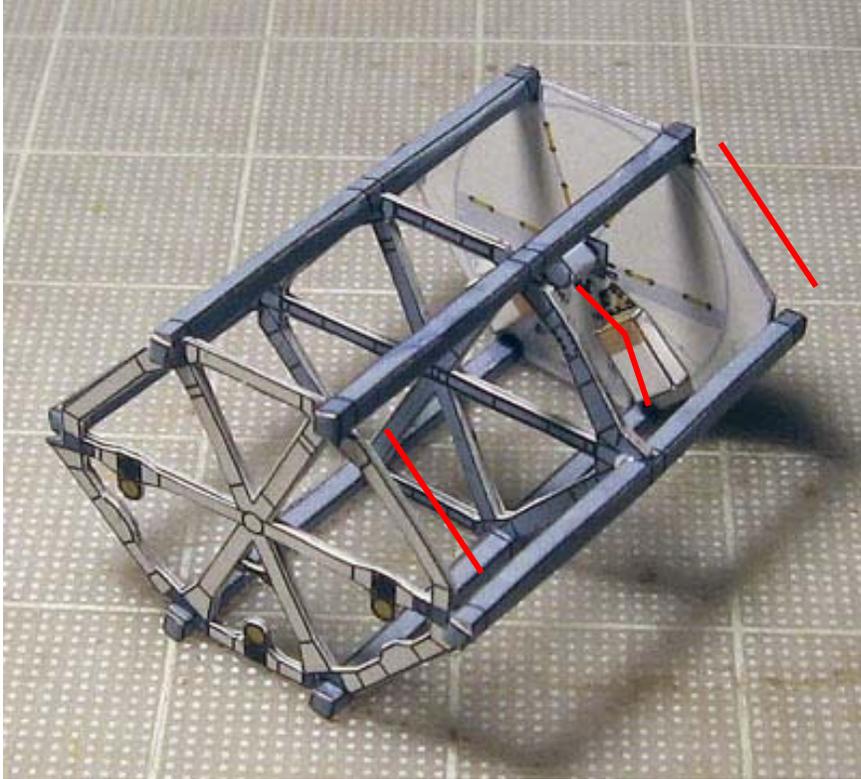
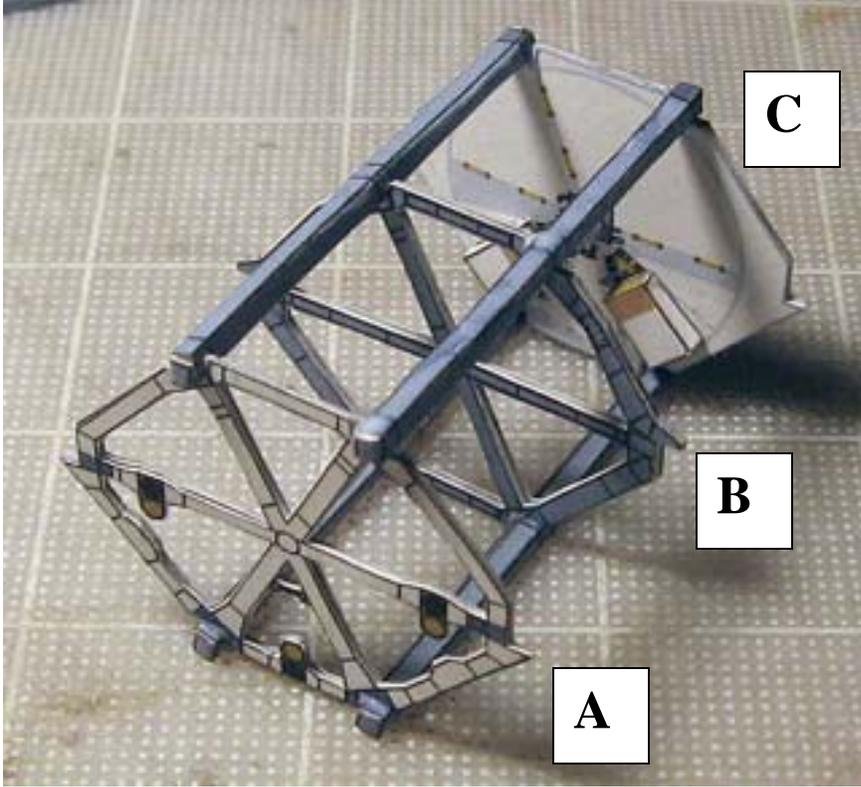
The angled side of wall "B" should face downward for a correct position.

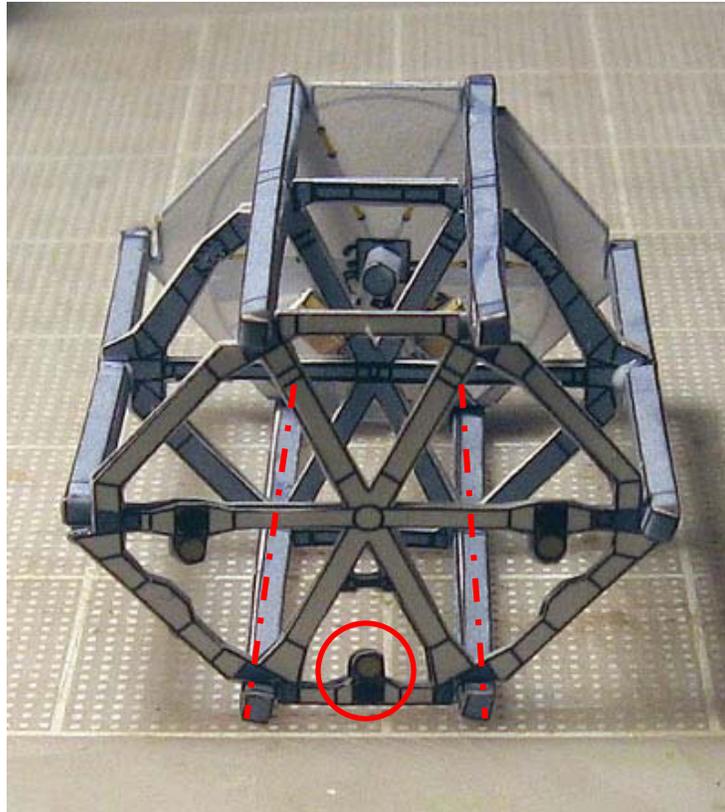
To correctly position the walls, follow this photo.

Note the 3 circular elements on wall "A" facing upwards. The same way when gluing wall "C", the 2 boxes should face upwards, too.



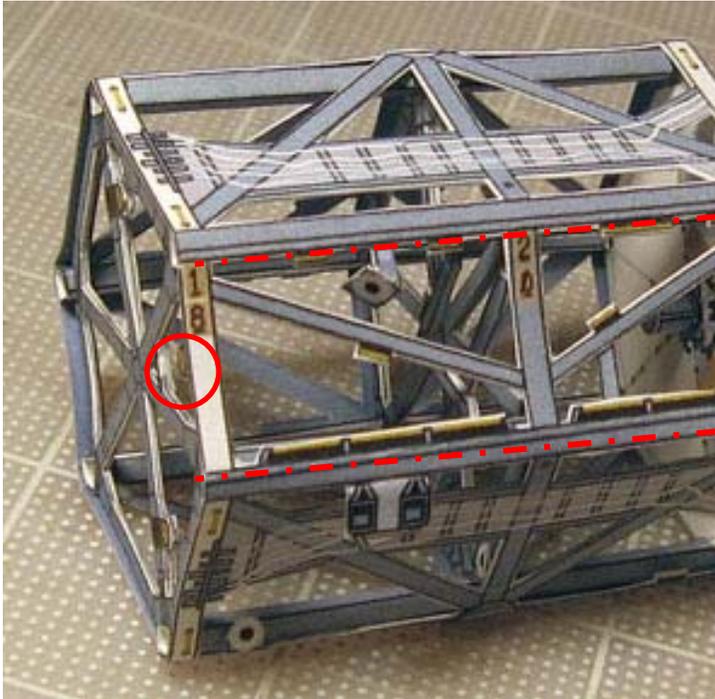
This is wall "C". It's the only wall that has the 2 flat boxes and the central cylinder. Photo shows the internal side of this wall.





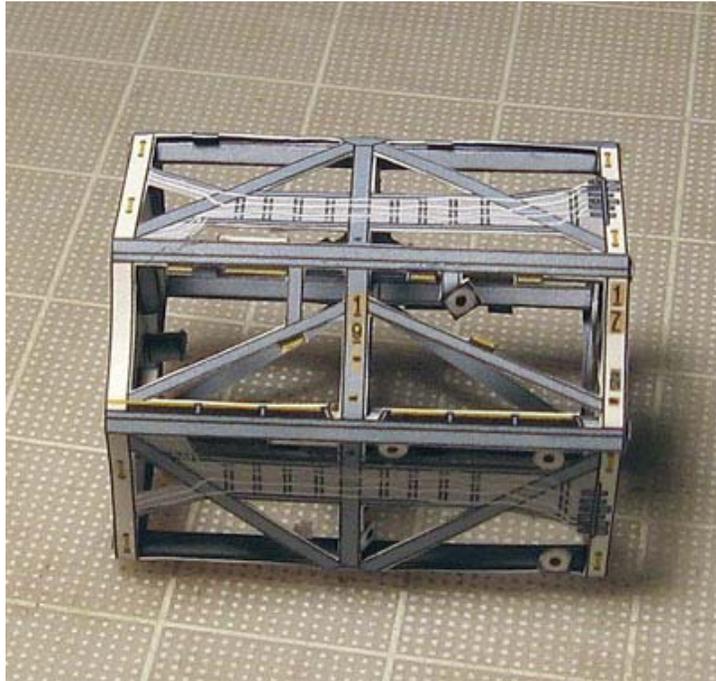
**Face 1**

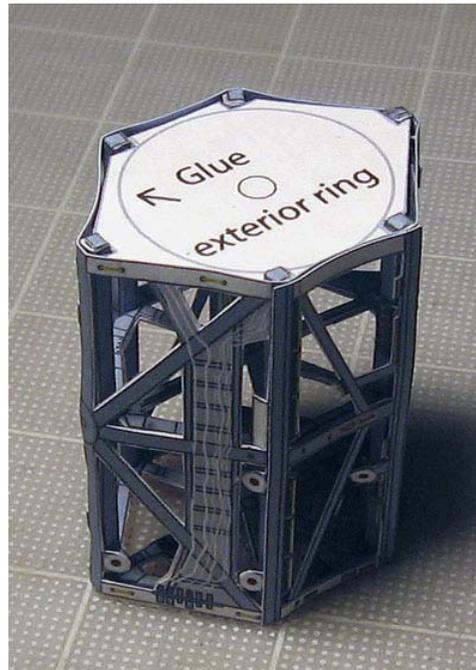
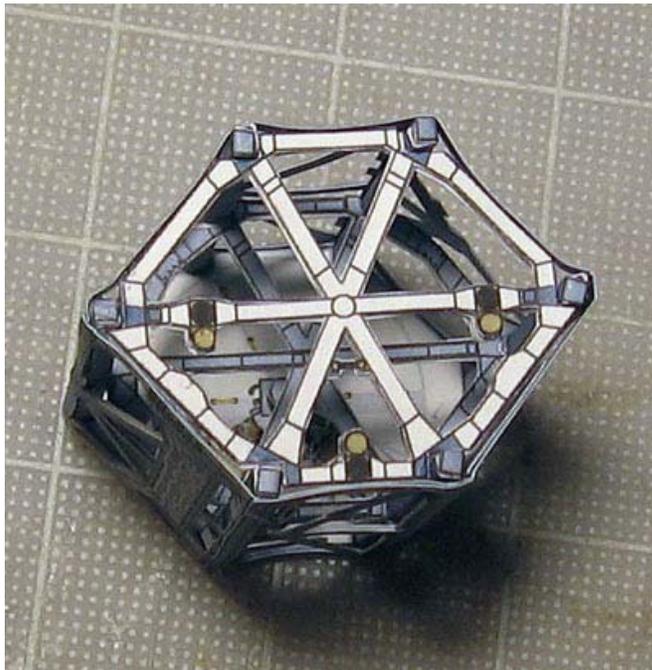
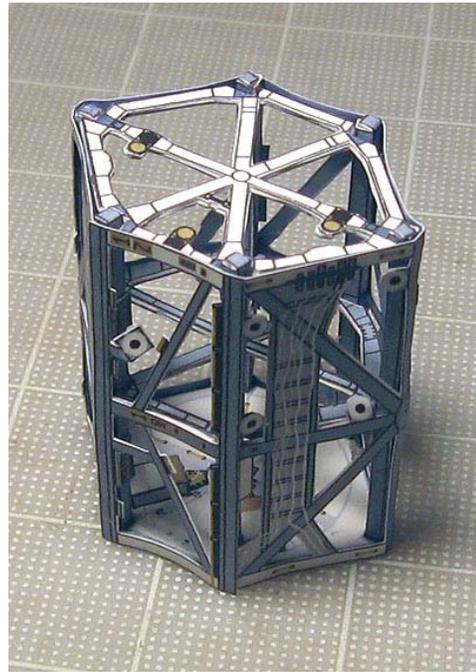
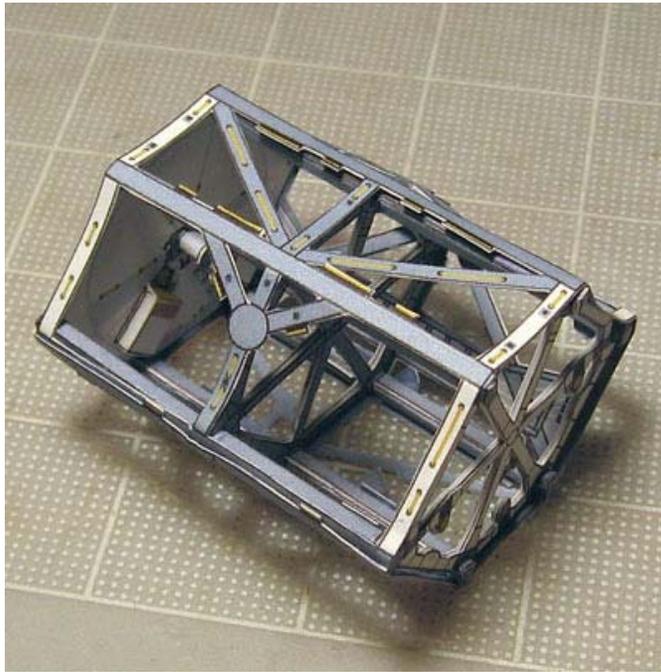
The “skin” has one side where **Face 1** is glued. **Face 1** is the part that shows numbers. When gluing the skin, **Face 1** is the first part of the skin that is glued to the part of the truss skeleton that is centered with the circular element. (See below)



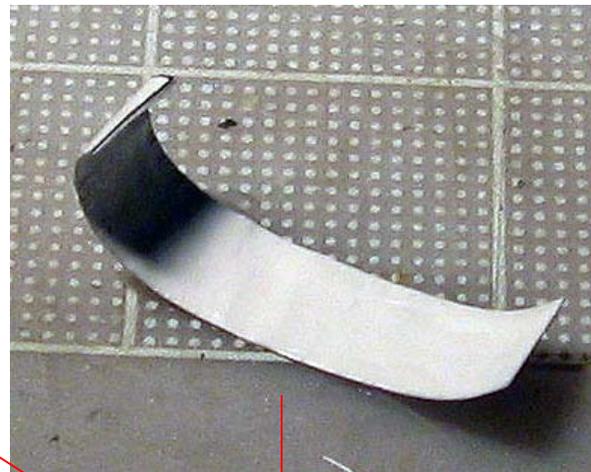
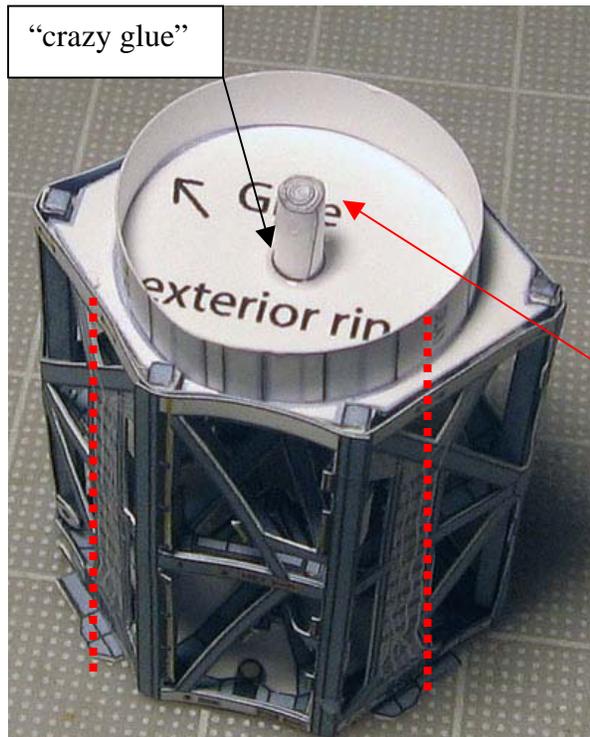
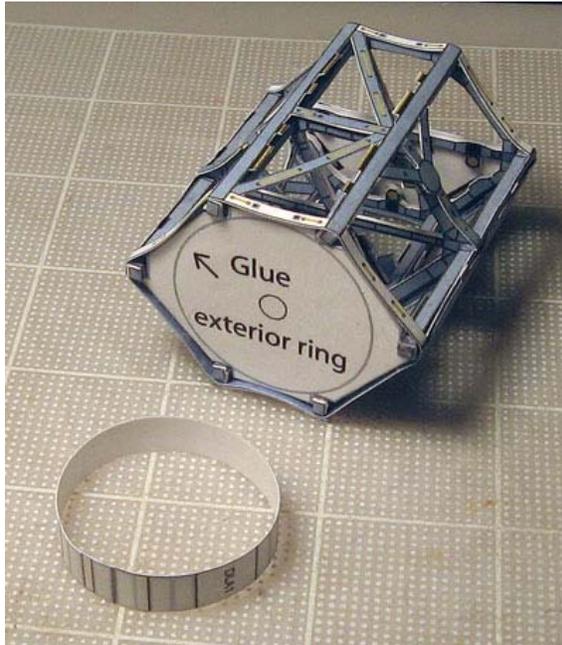
To correctly position the truss “skin” already cut and folded, start gluing the skin on the side that is centered with the circle.

Reference photos

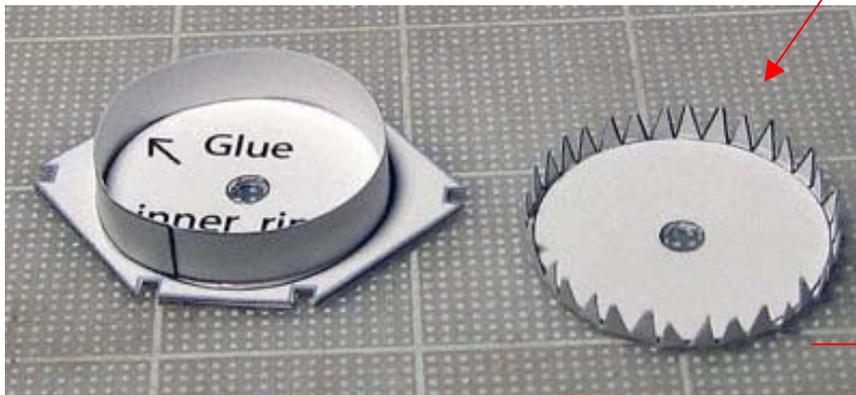
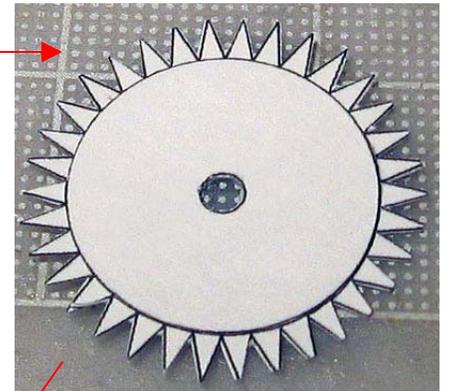
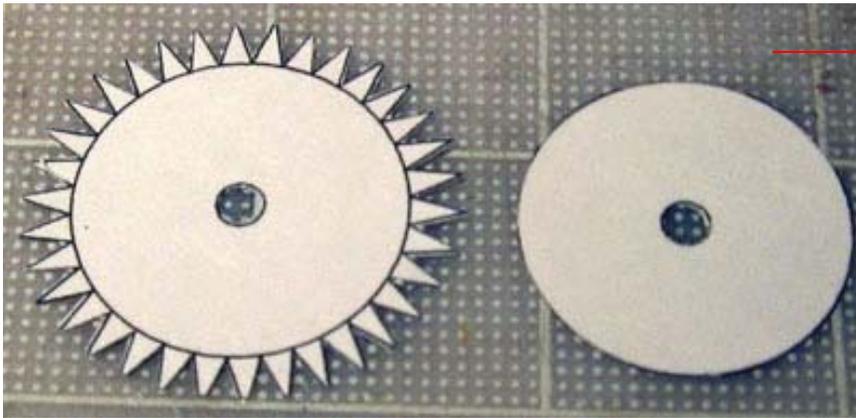


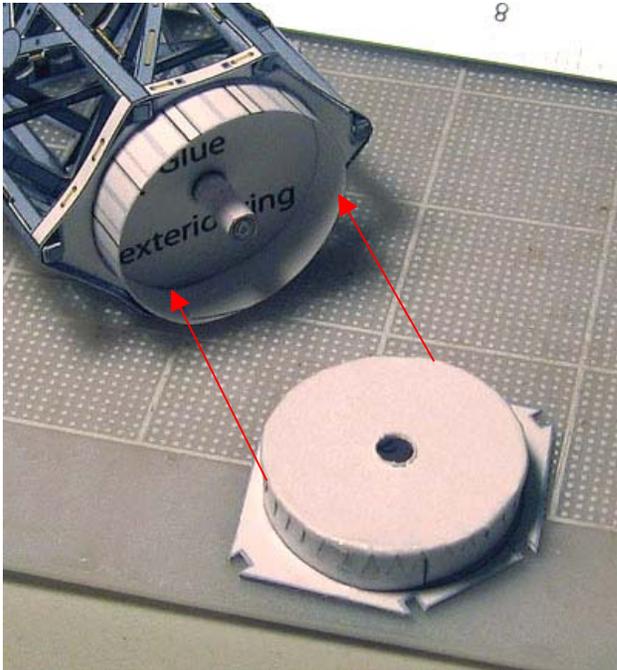


## Building the SARJ area



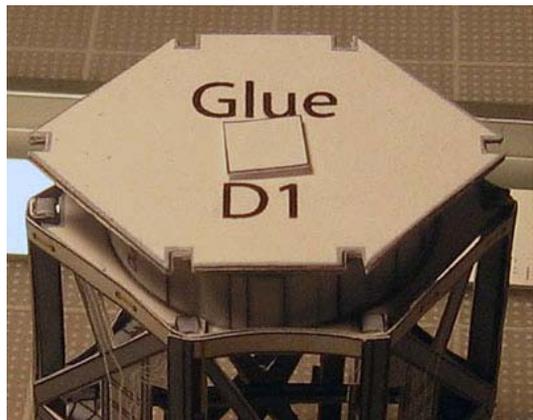
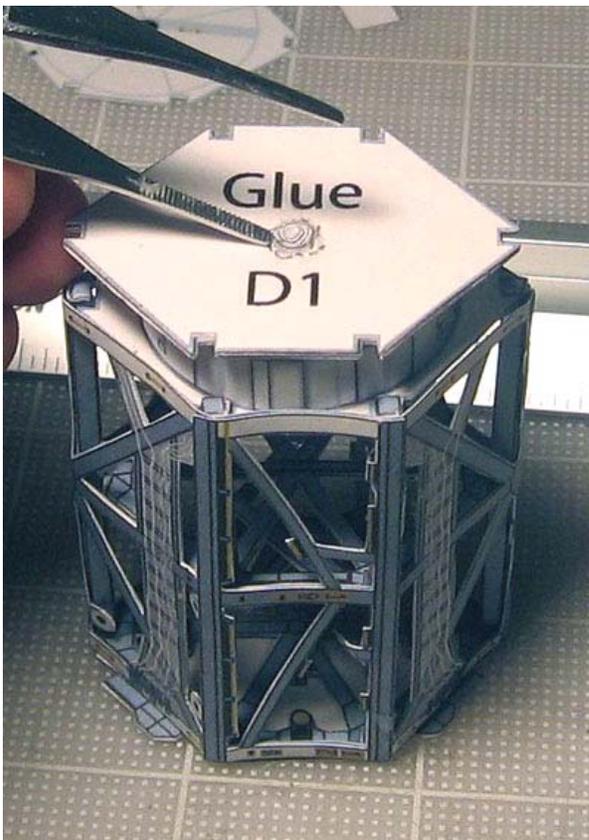
The "DLA" markings need to be lined up with the sides that have the cable drawings.



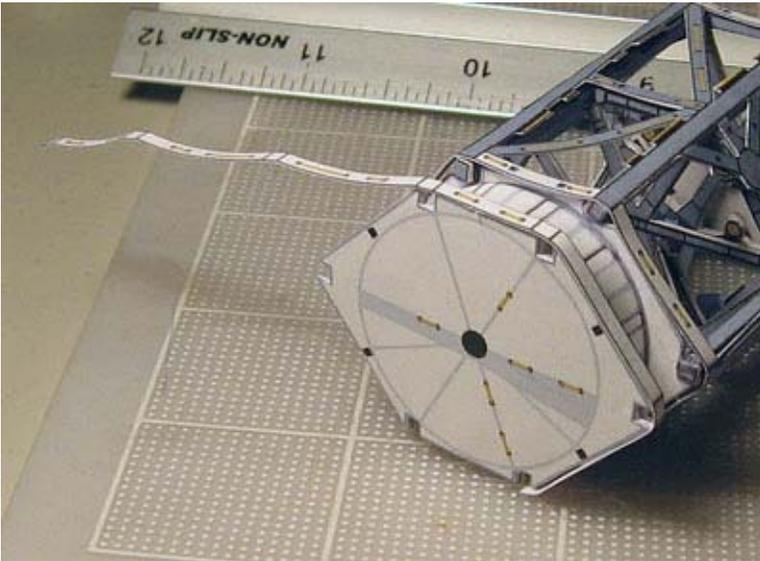
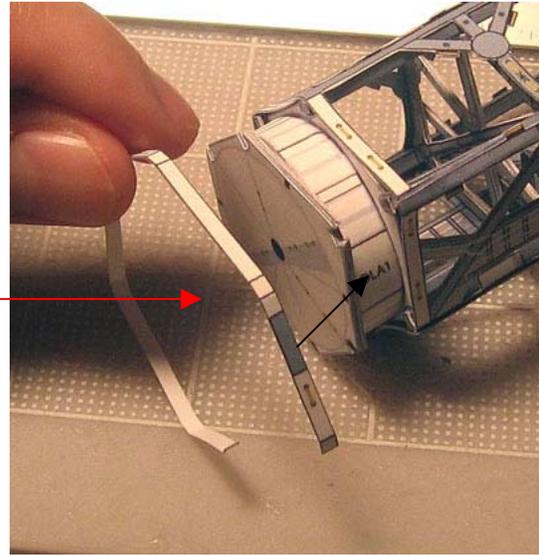
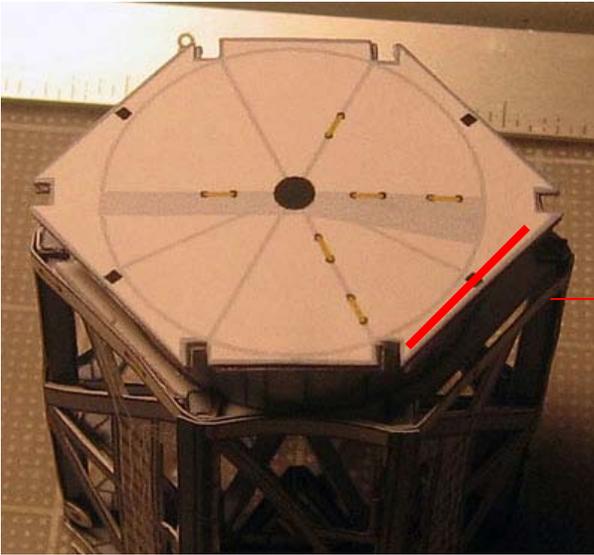


This part is not glued to the truss. It snaps tightly so it can rotate.

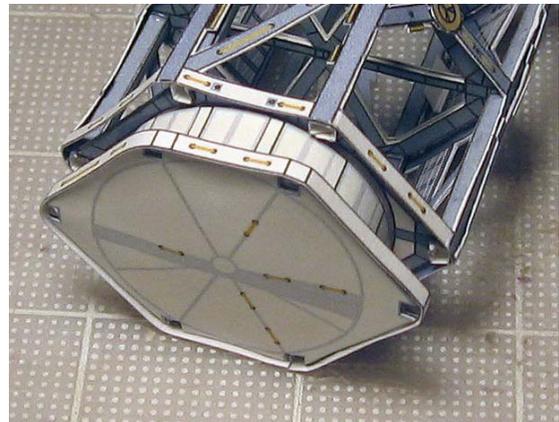
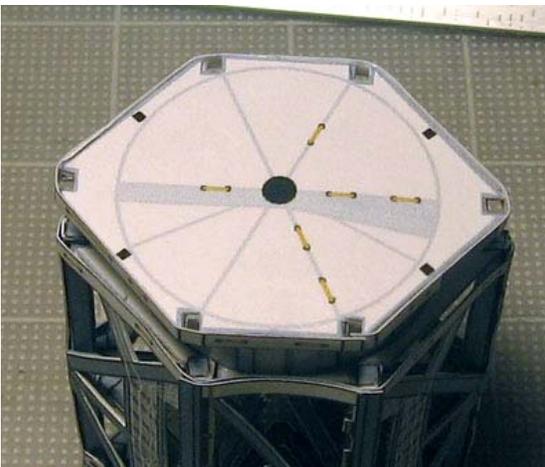
“crazy glue”



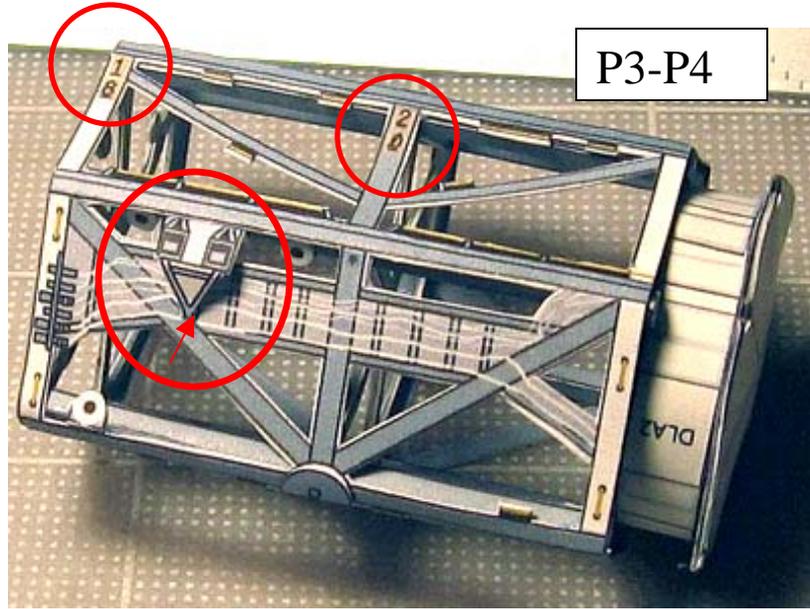
At least 1 mm of the cylinder needs to be free to glue the square cover on top.



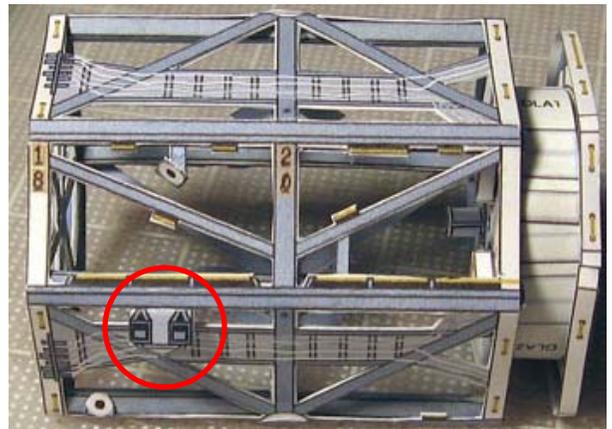
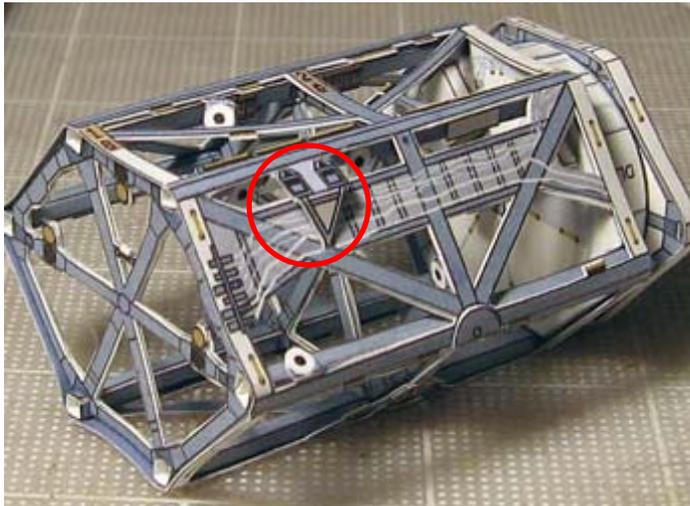
Align the gray area with the DLA marking on the SARJ and continue gluing along all the sides of the external hexagon.

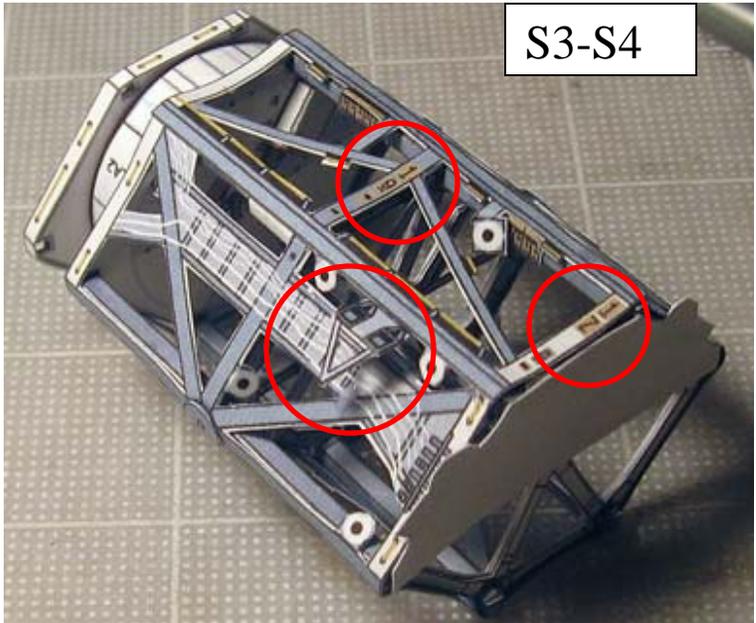


## Adding the UMA's



The UMA (Umbilical Mating Assembly) location for the **P3-P4** truss is shown on this photo. This UMA is positioned below numbers 18 and 20 on the face that has the cables. The tip of the triangular part is glued where the arrow shows. Photos below show other angles for reference.

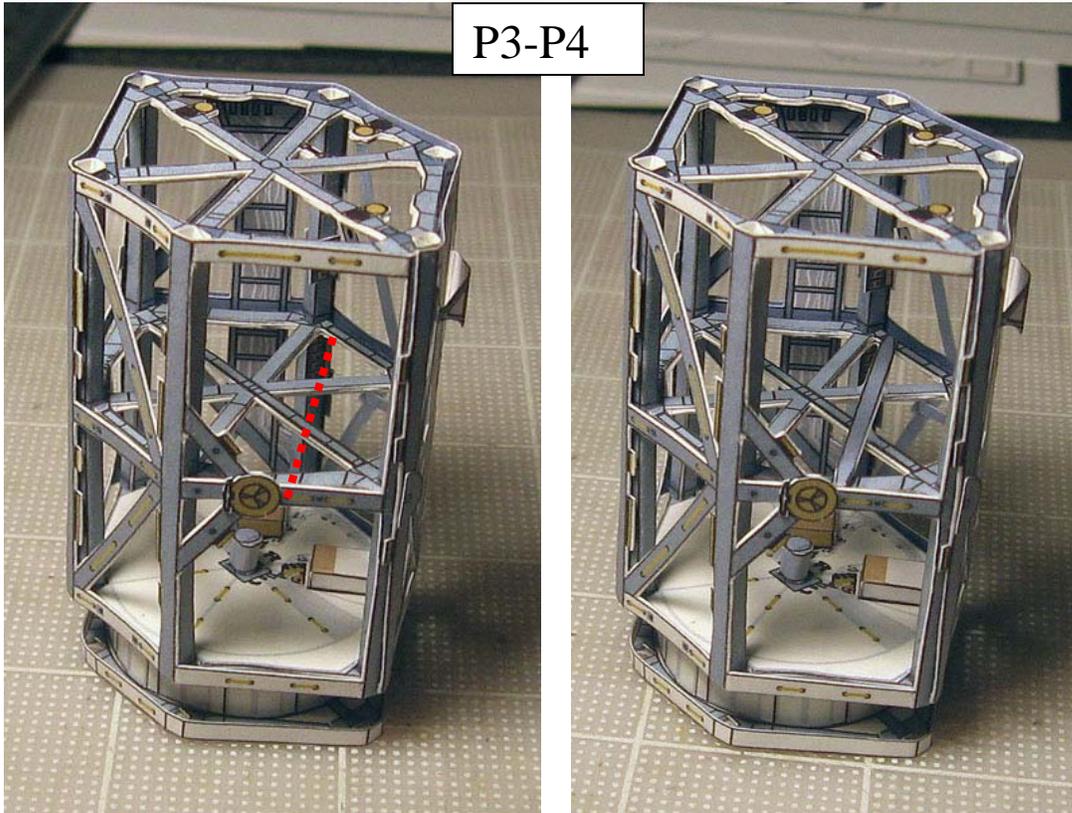




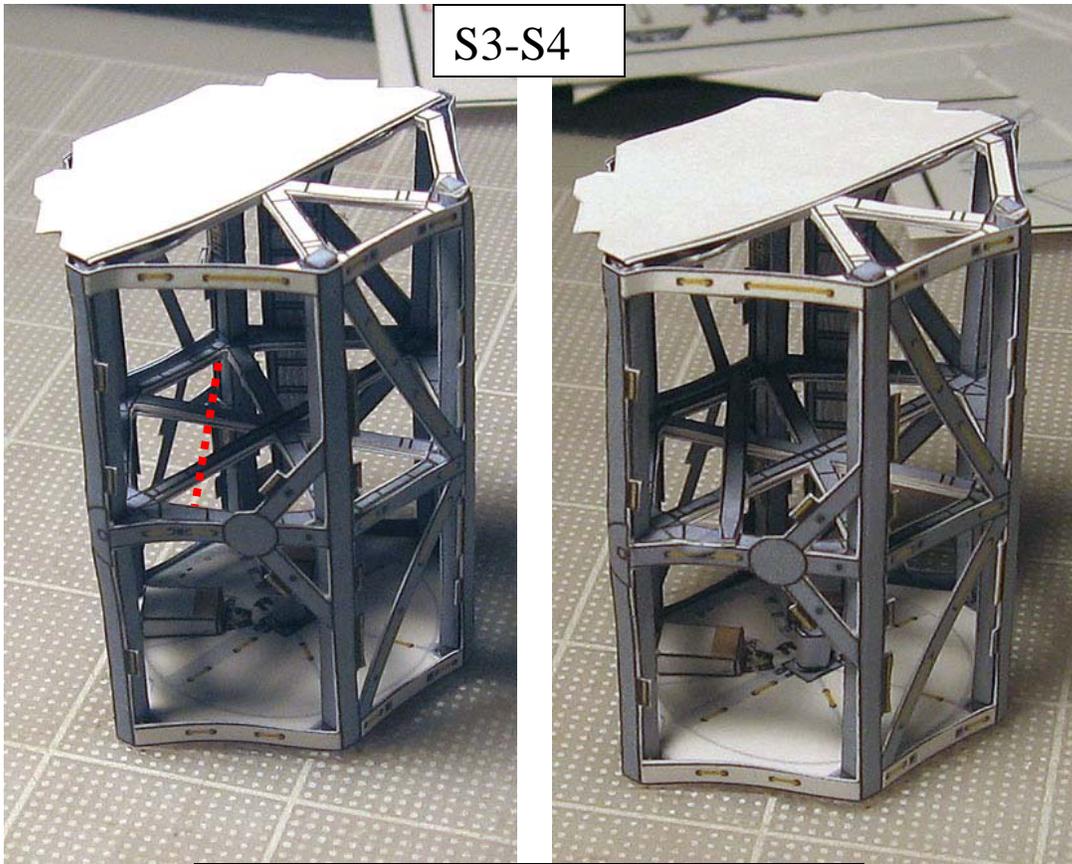
S3-S4

Note the location of the UMA on the S3-S4 truss. This UMA is below the numbers 17 and 19.

**Adding the Drag link (stowed configuration)**



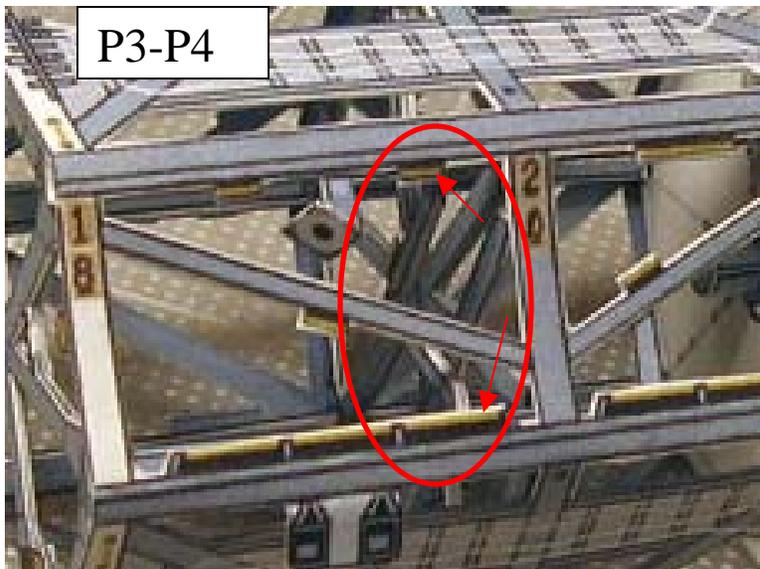
P3-P4



S3-S4

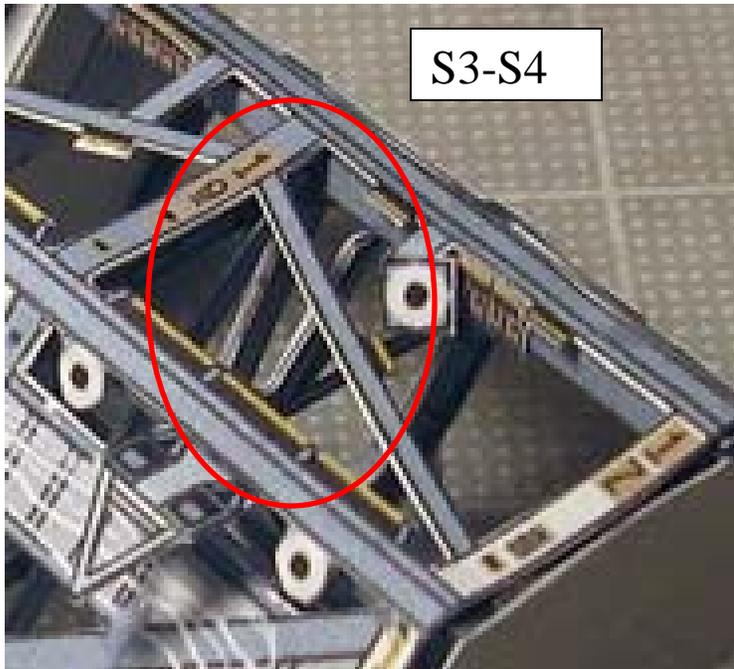
This model has the white surface area that will connect to the rest of the truss (explained later)

**Adding the Keel pin (stowed position)**



P3-P4

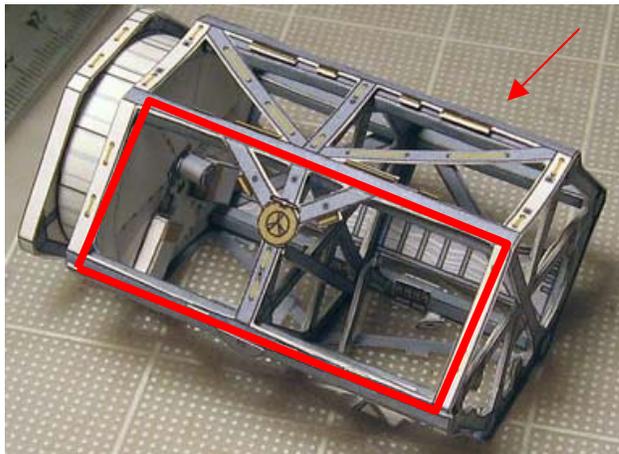
The V shape keel pin is shown on its stowed configuration. Is glued to both upper and lower handrails (arrows) between numbers 18 and 20.



S3-S4

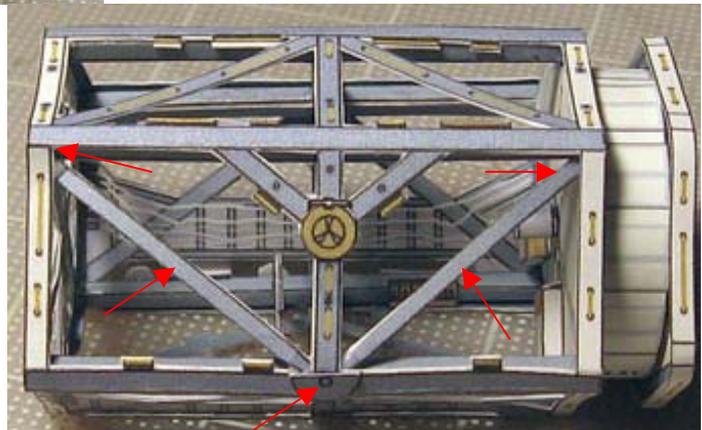
On the S3-S4 truss, the keel pin is placed between numbers 17 and 19 as shown.

**Closing the truss cage with more beams**

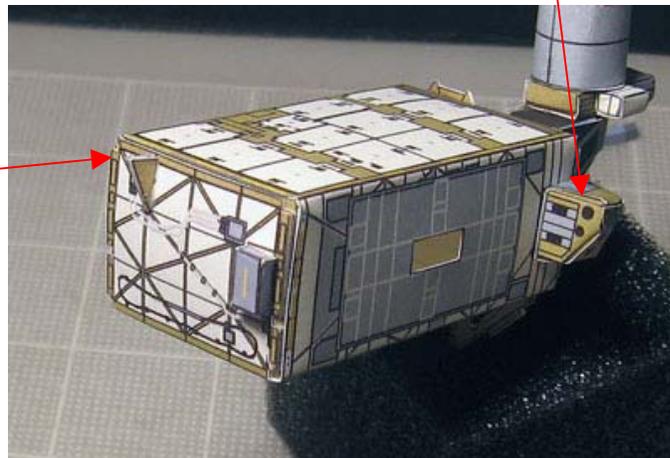
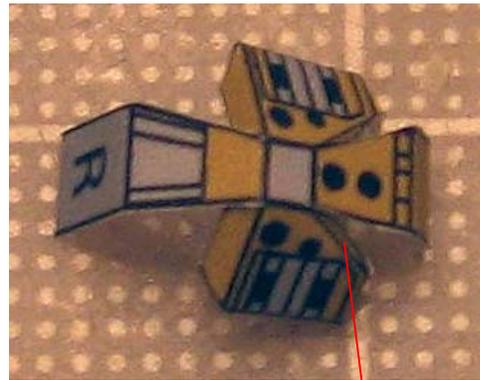
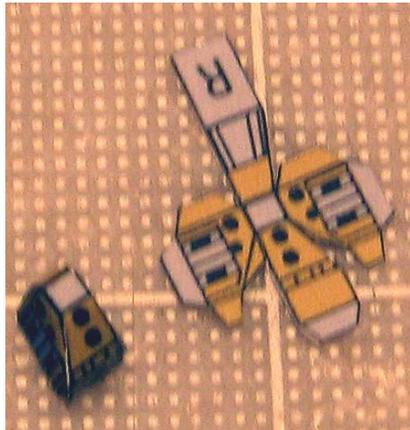
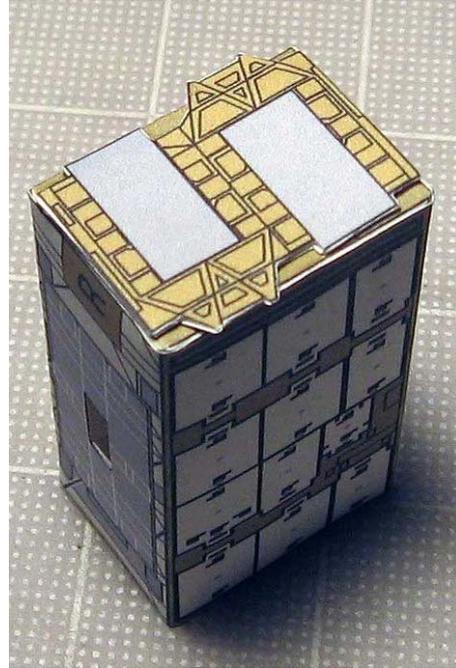
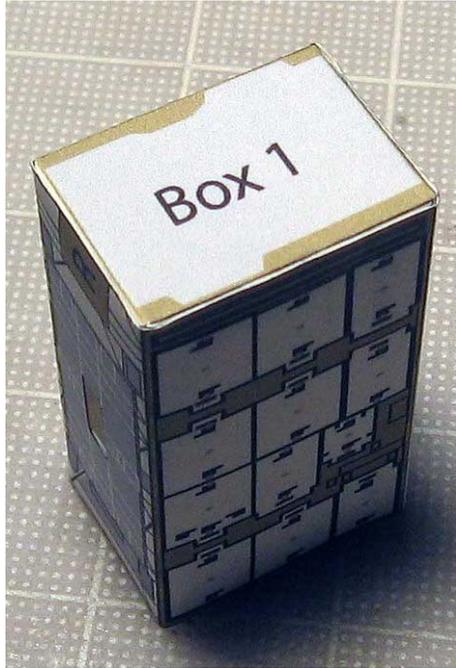


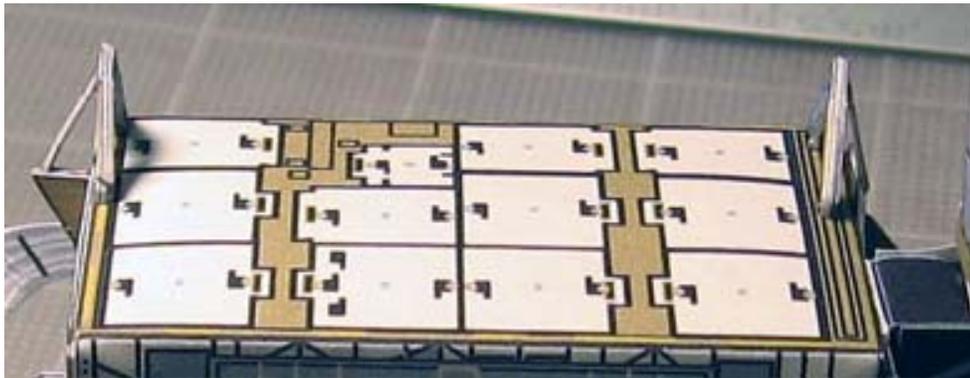
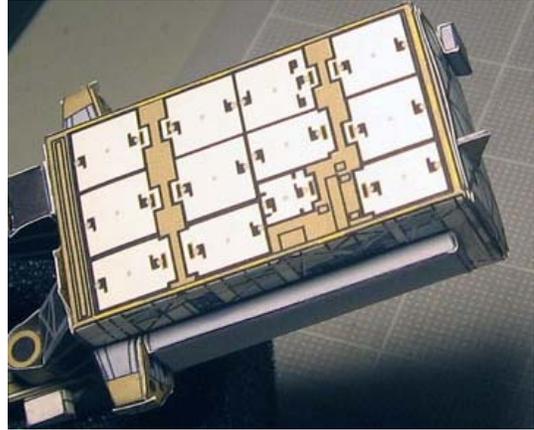
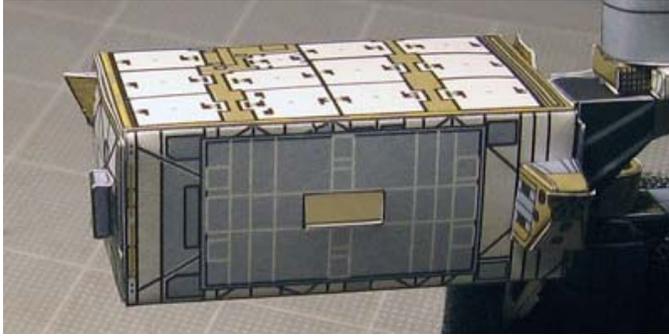
This area and the opposite side (arrow) are wide opened in order to glue the keel pin and the drag link. Also if the model is configured for payload bay configuration, this will facilitate to glue the UCCAS and PAS inside.

Once the drag link and keel pin are glued in place, extra beams (arrows) are glued as shown to close the cage. This model shows the beams glued inside the white vertical beams and inside the trunnion area.

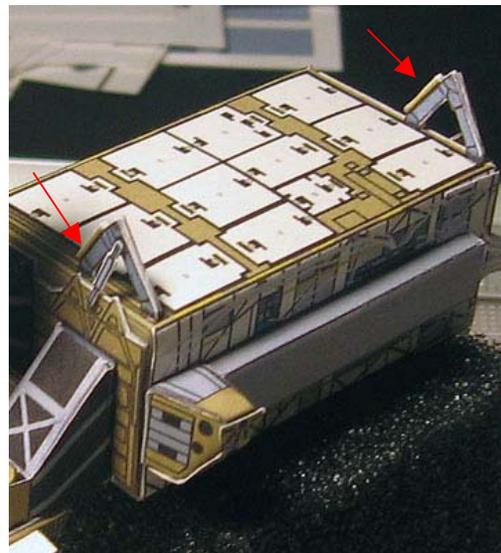
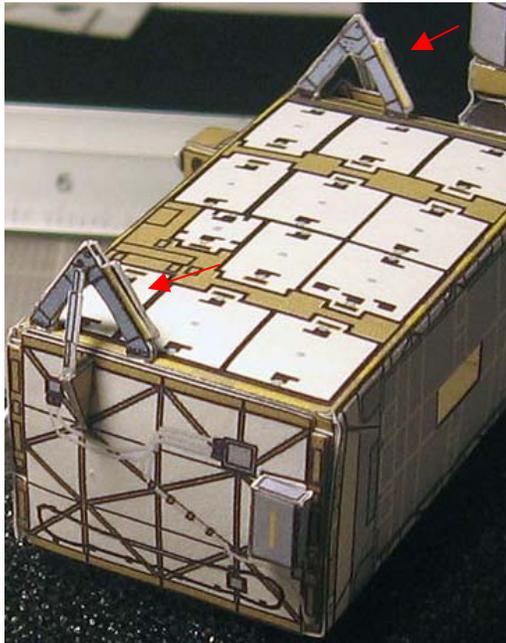


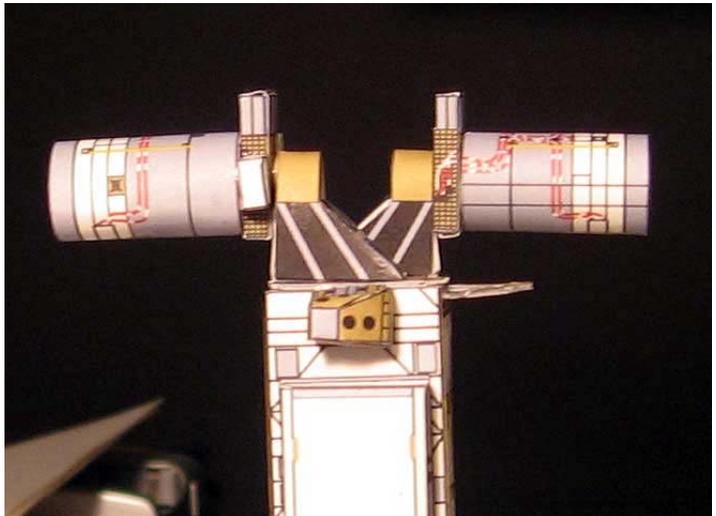
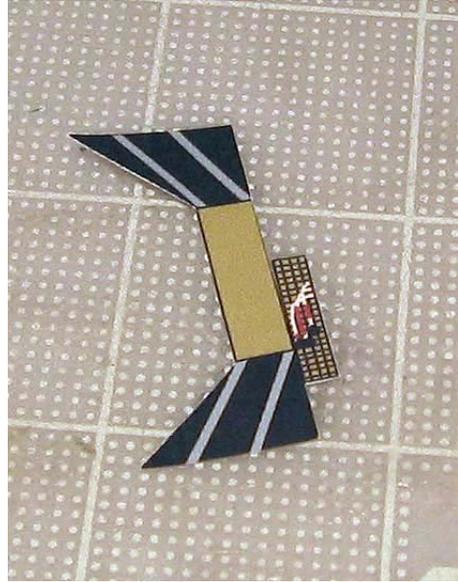
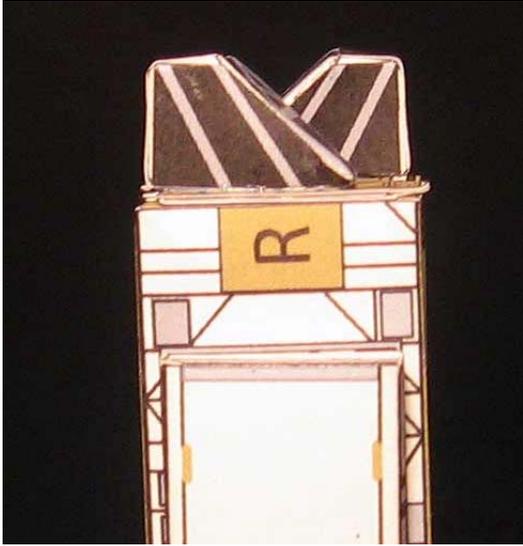
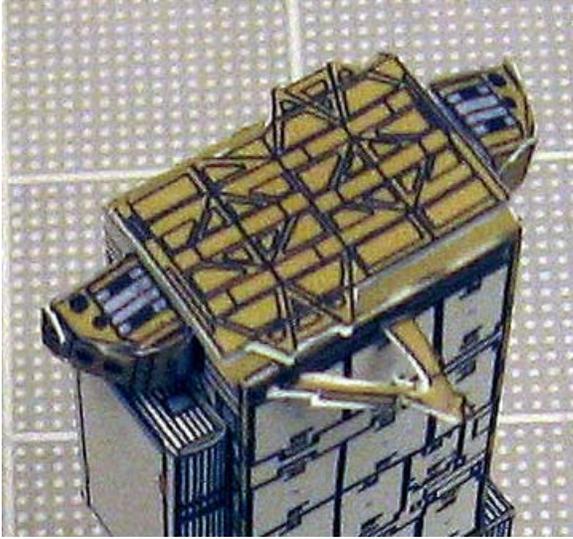
**Building the S4 and P4 segments (identical models)**

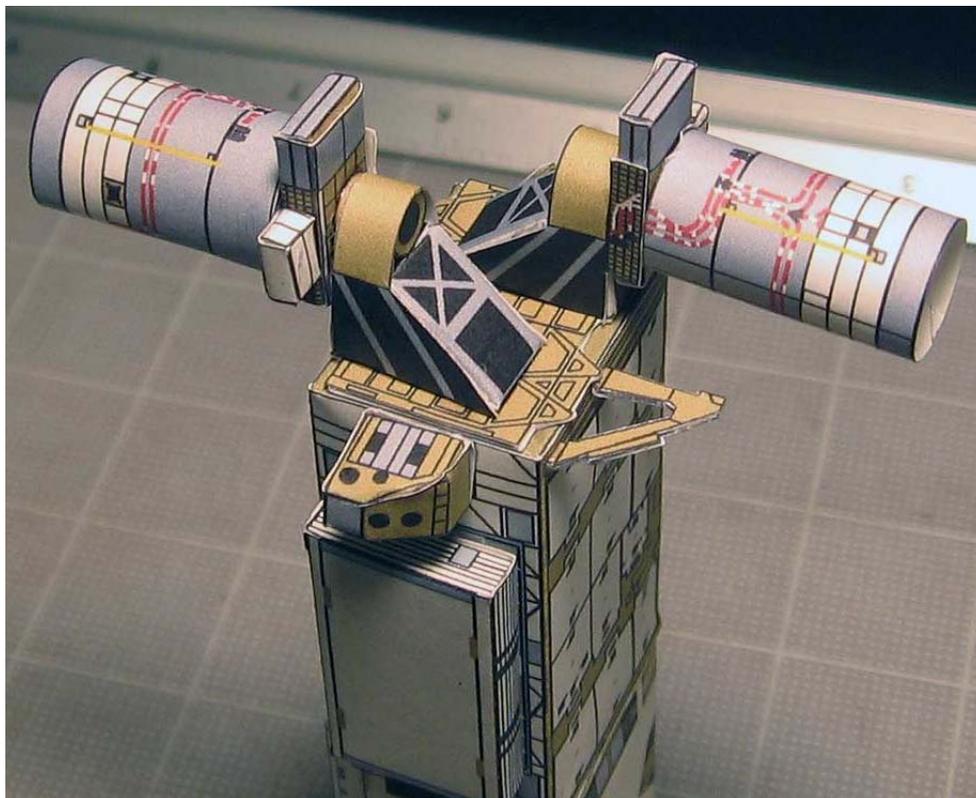
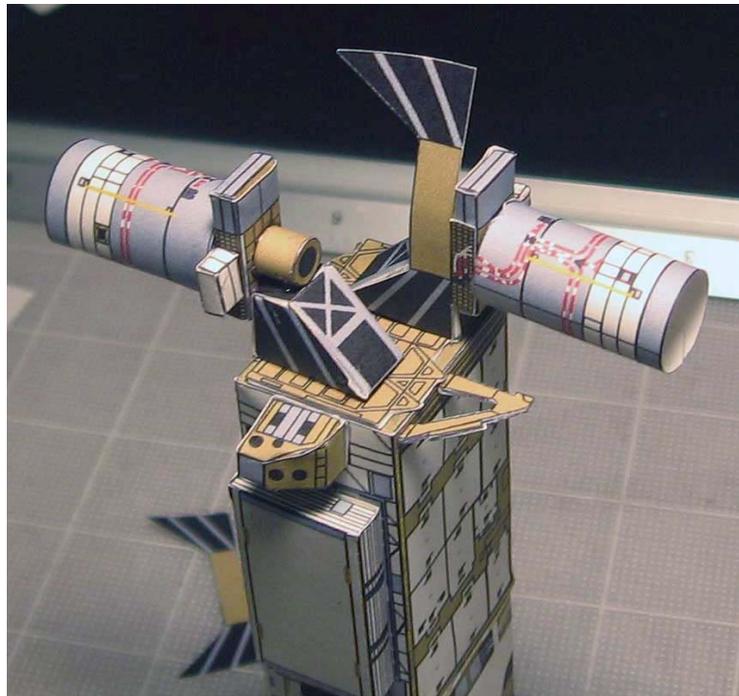




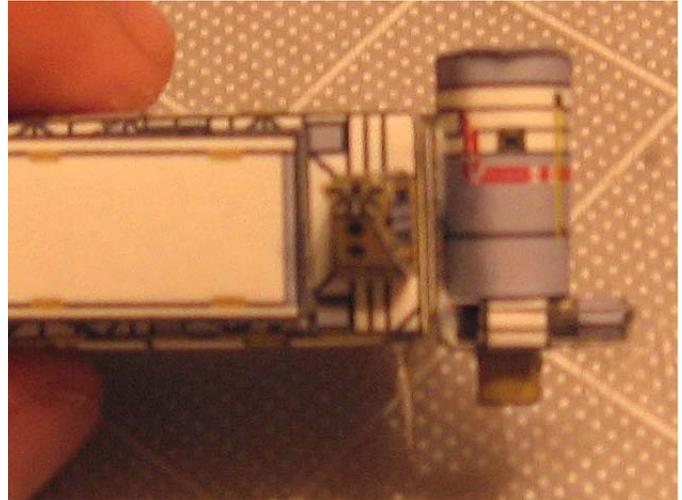
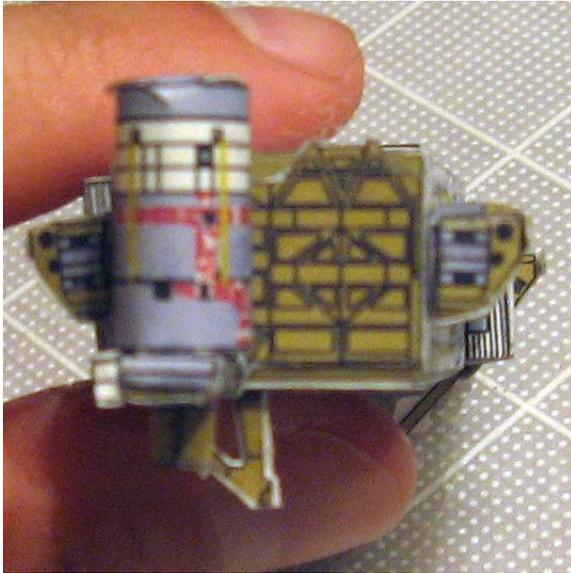
Note position of the V shape parts and the orientation of the handrails.





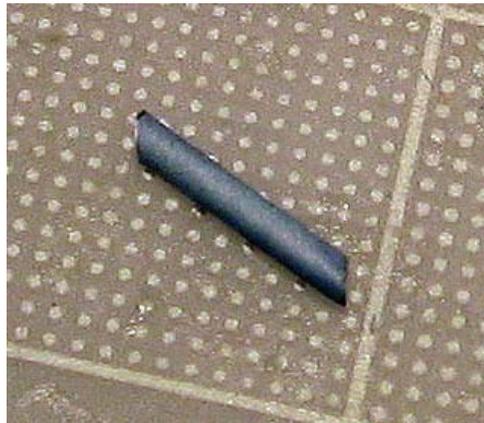


Solar Array Canisters in un-stowed configuration for Space Station version.

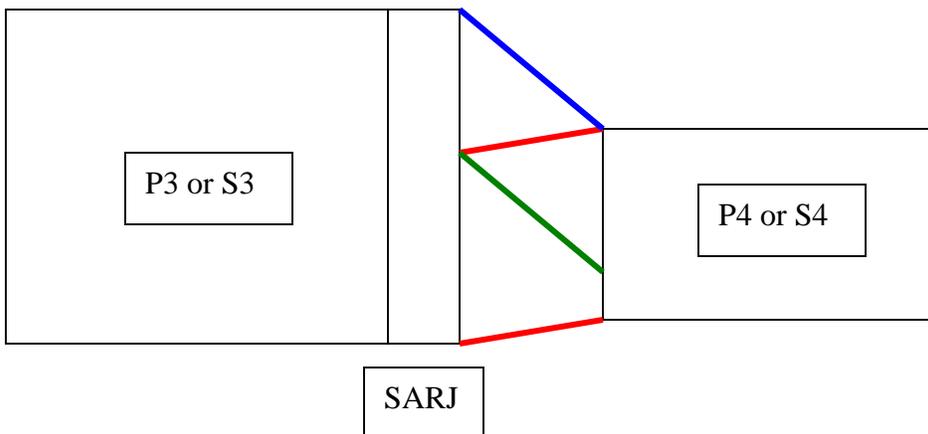


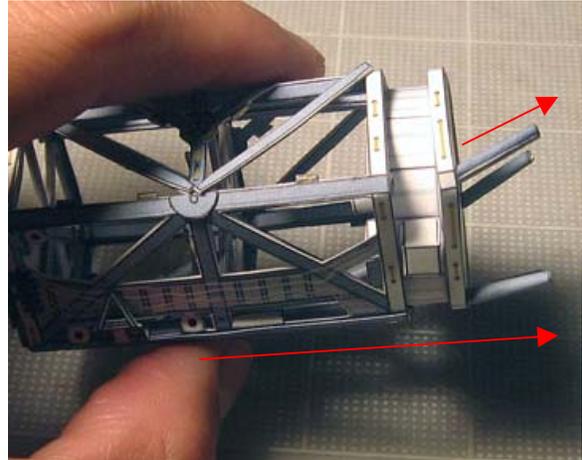
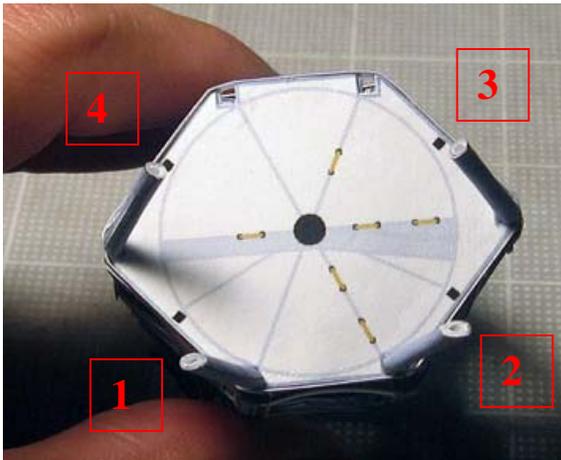
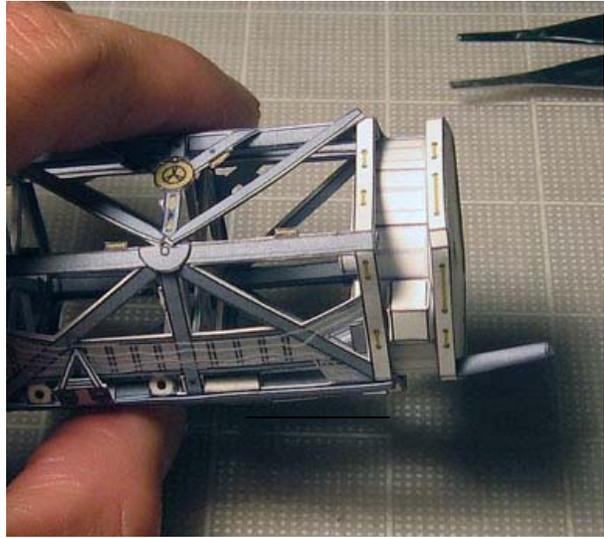
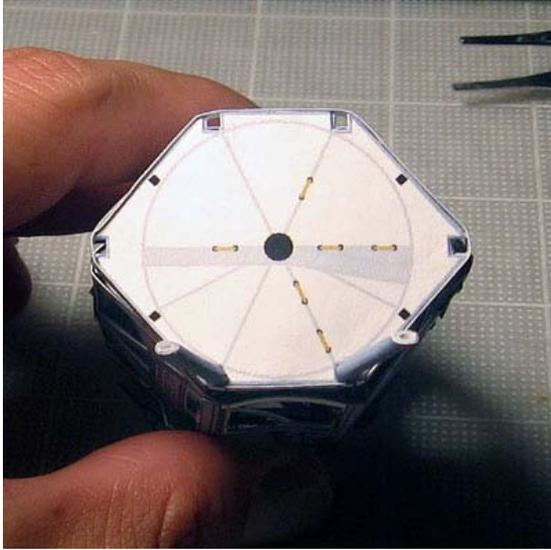
Solar Array Canisters in stowed position for Payload bay version.

**Connecting truss segments**

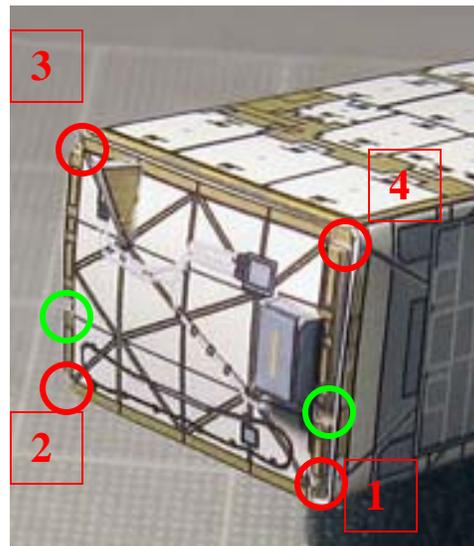


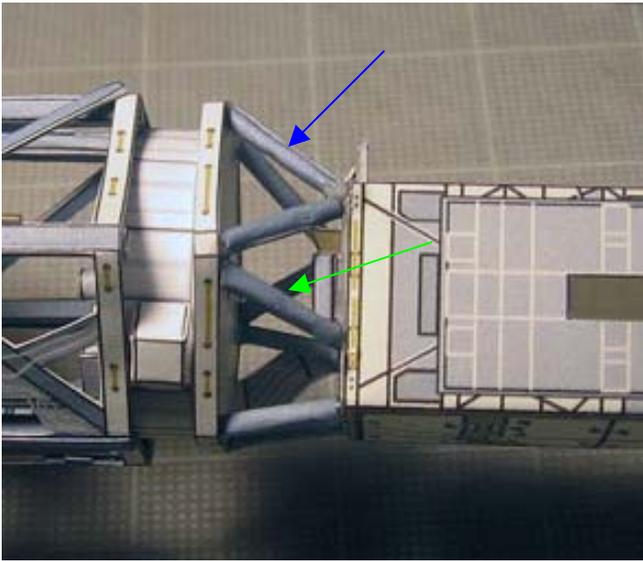
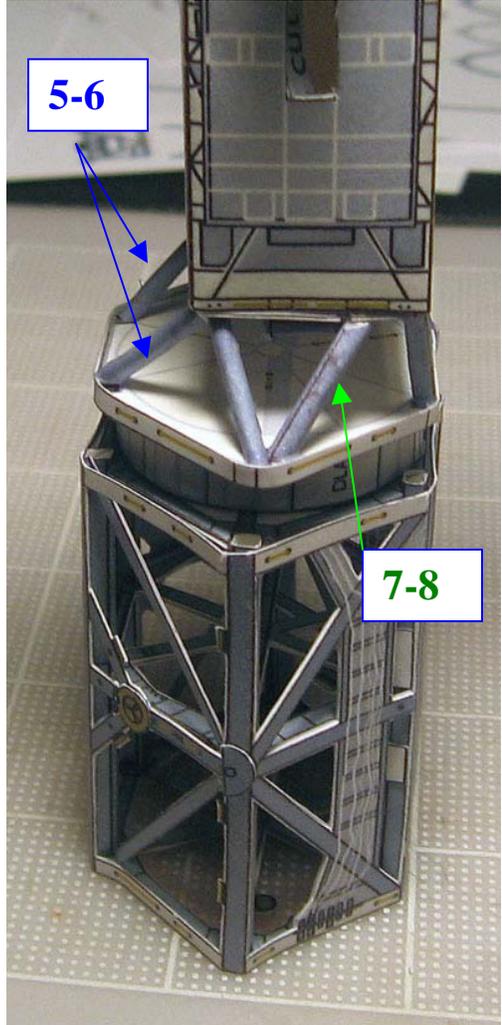
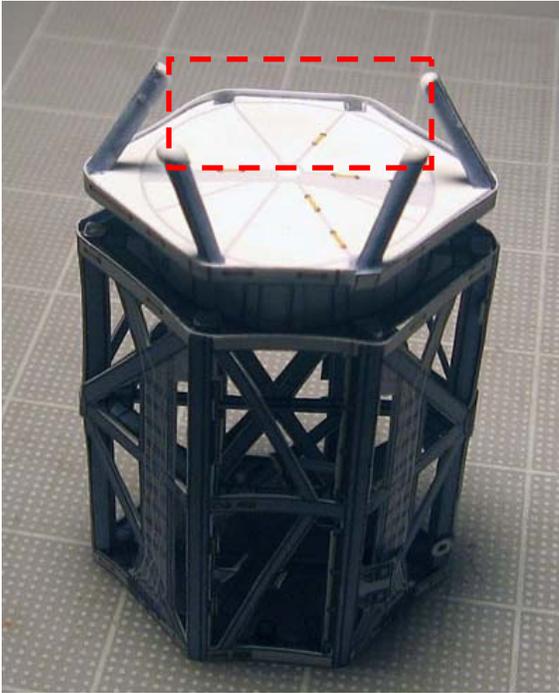
These tubes are rolled tight and glued with normal water based glue (Elmer's). 6 are the same size while 2 other tubes are longer. Before gluing them each end is cut in an angle to fit in the SARJ holes.



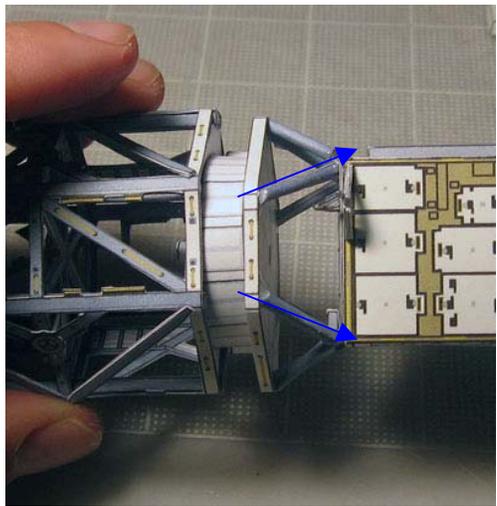


These 4 tube connectors are the same size. Crazy glue is used for this step. The 4 small red circles indicate the area where these tubes are glued (corners). Note that tubes 1 and 2 are almost horizontal while tubes 3 and 4 are positioned slightly upwards. While all 4 tubes are being glued, put the box on top of the tubes and match the corners with each tube and let it dry. Immediately, put the upper longer tubes in place and glue them (5-6) in the same corners for tubes 3 and 4.

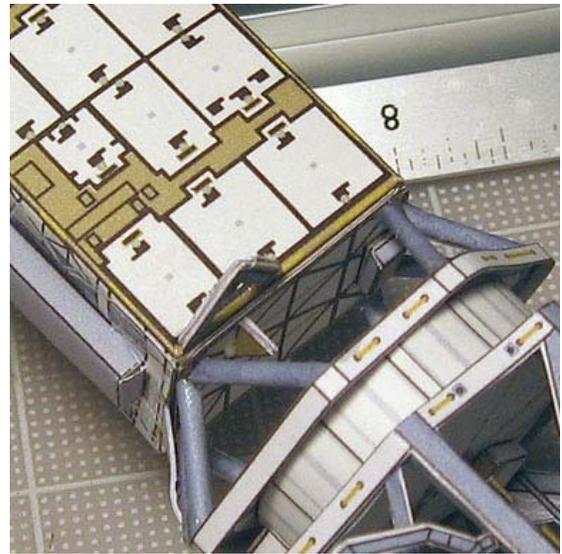
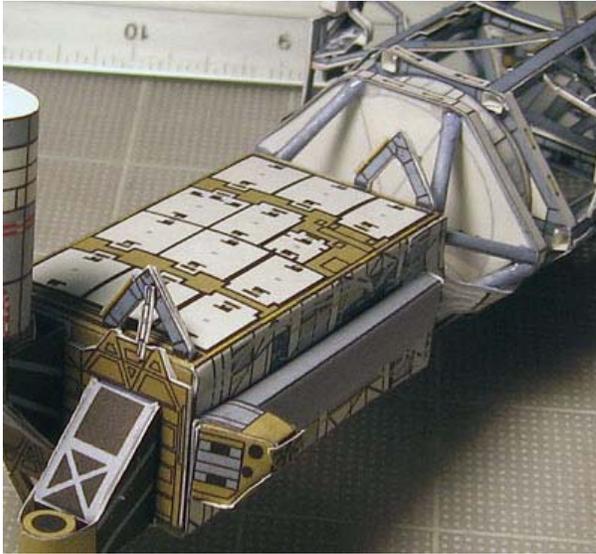


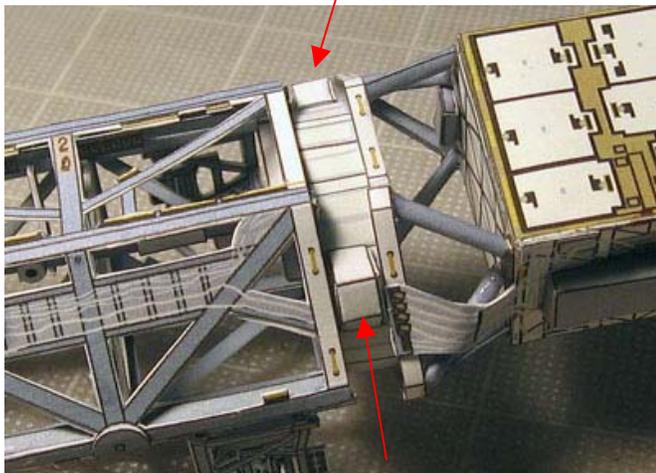
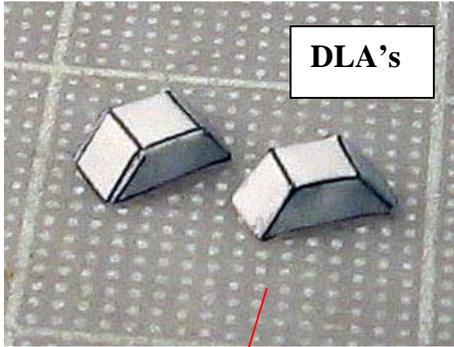
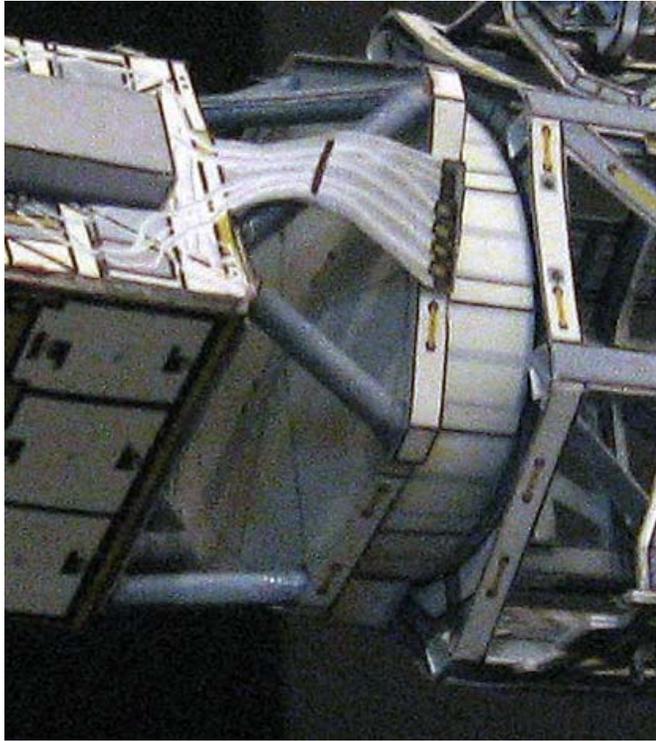


At the end, there are 2 more tubes (7-8) to complete a total of 8 tube connectors.

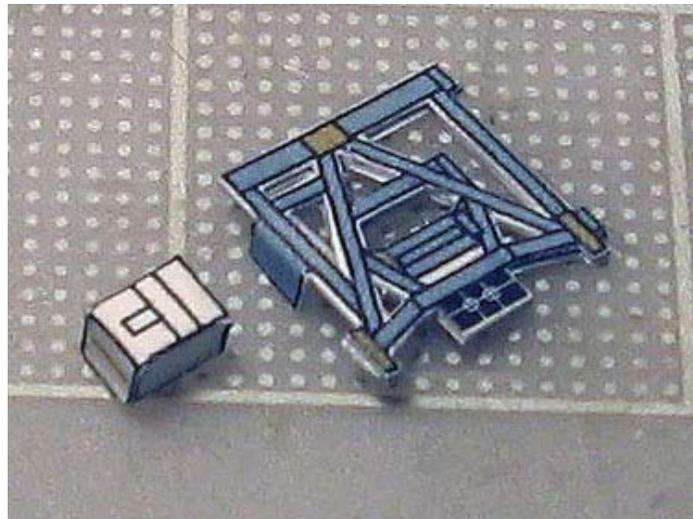
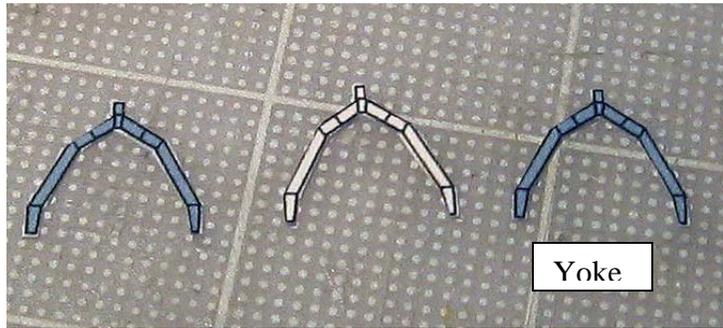
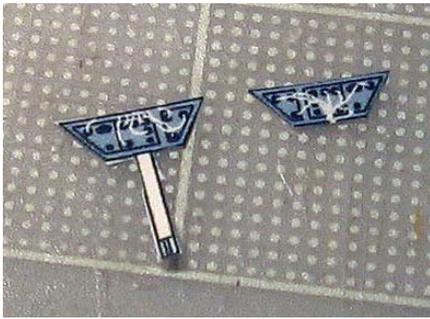
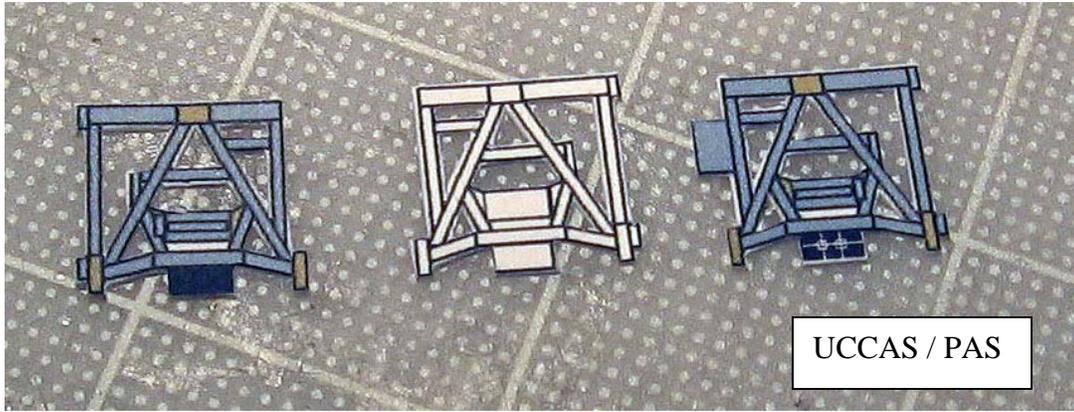


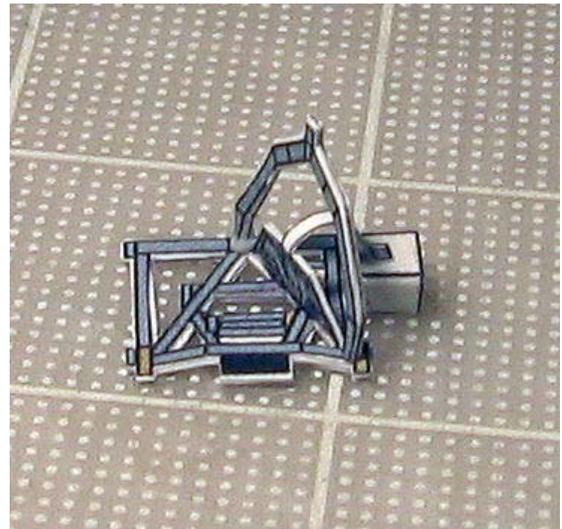
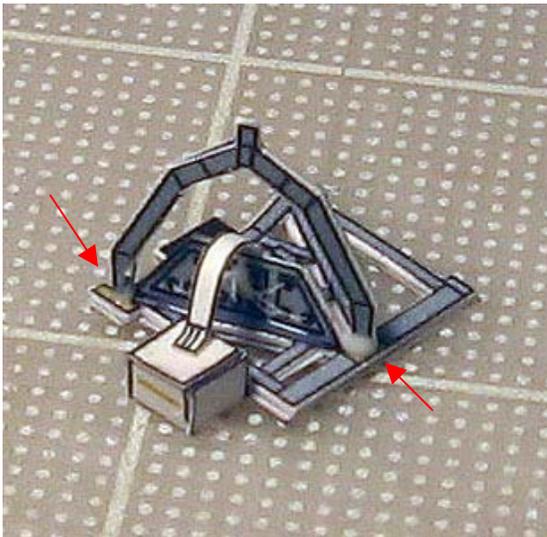
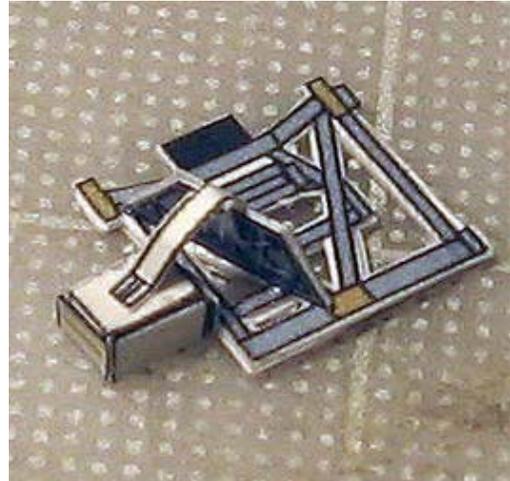
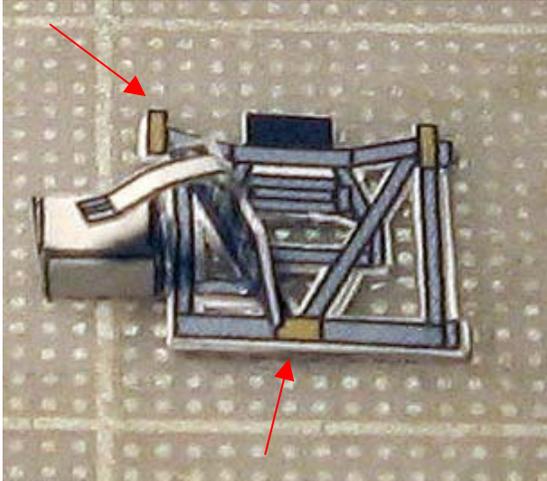
Top view of tubes 5 and 6



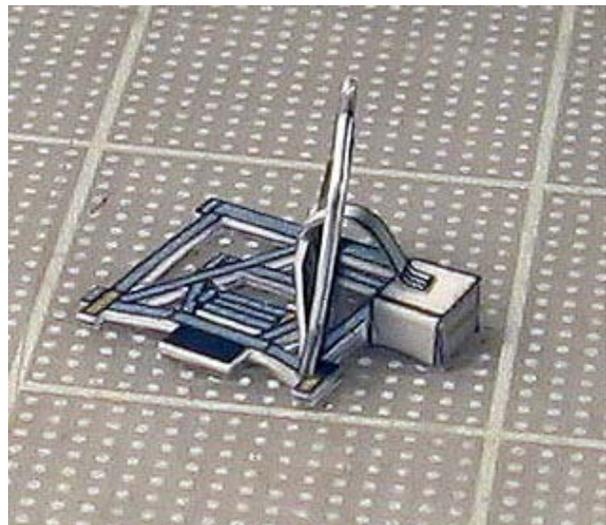


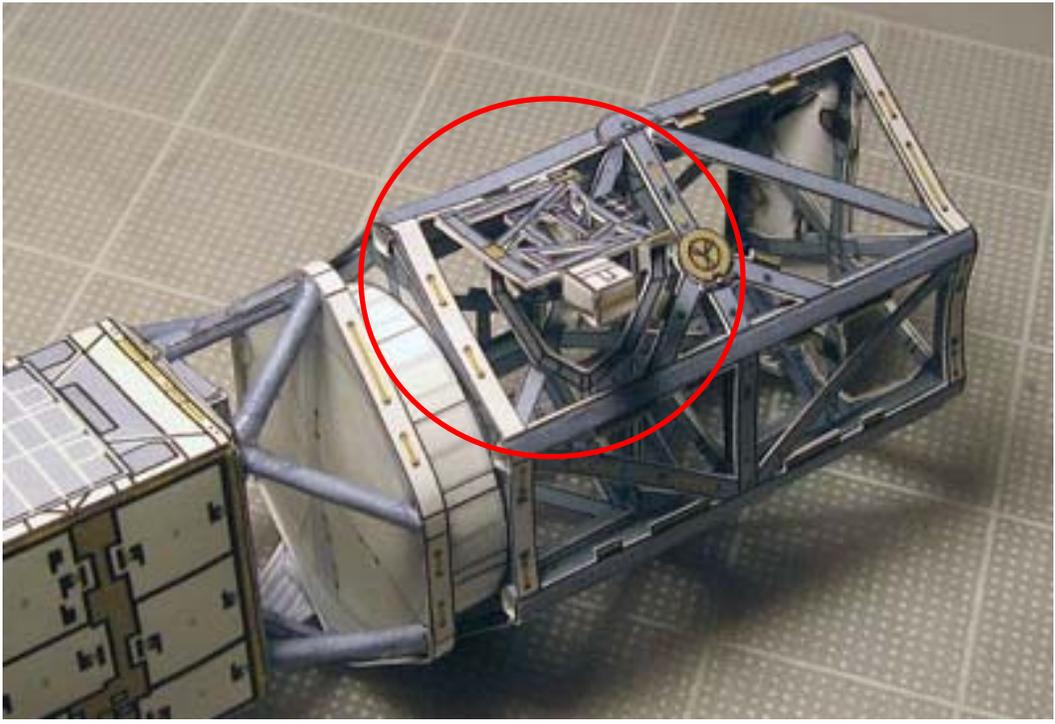
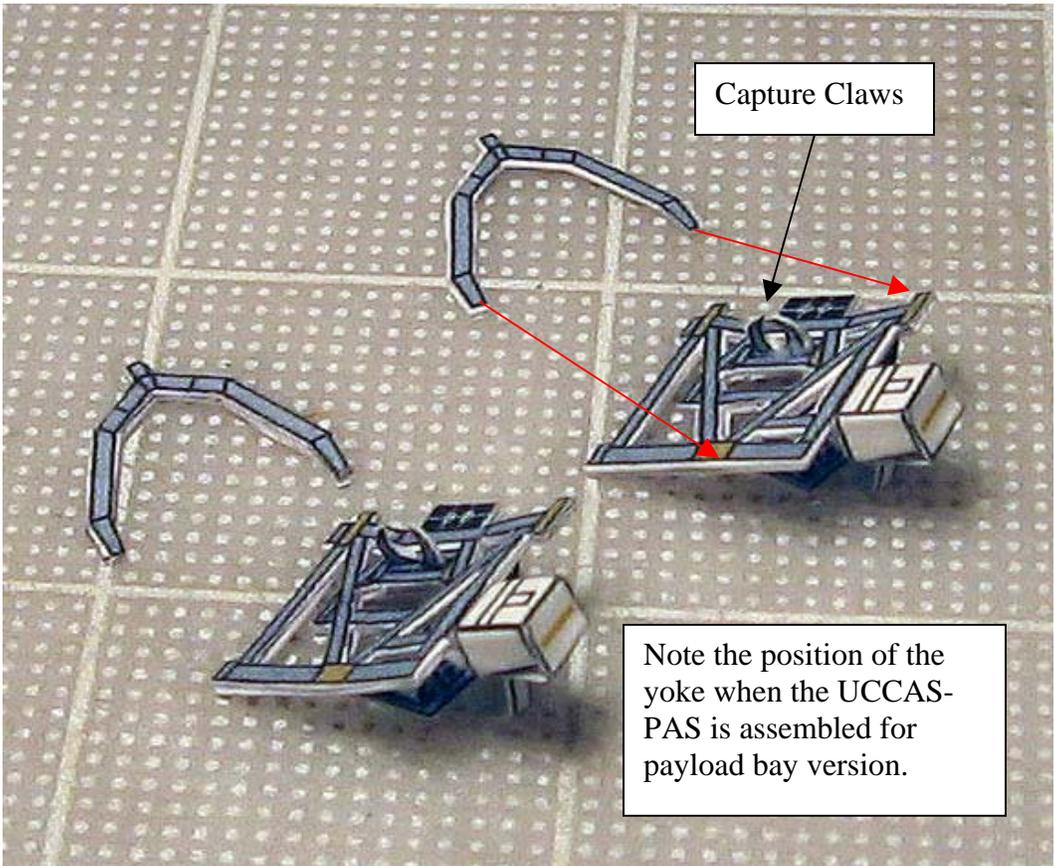
**Building the UCCAS and PAS (same)**

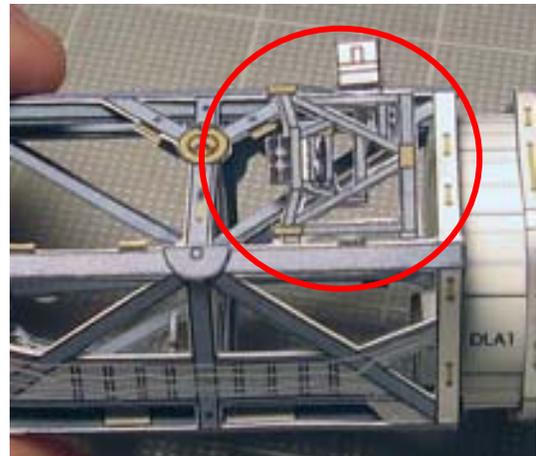
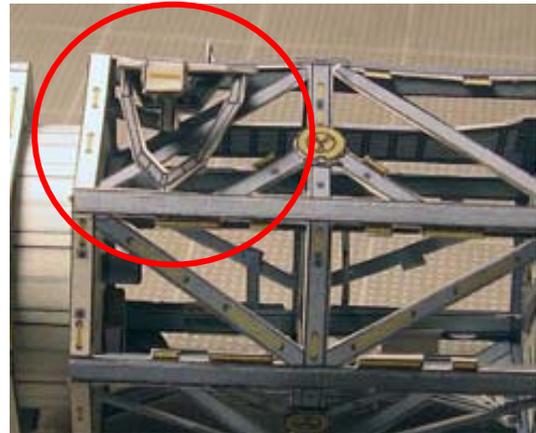
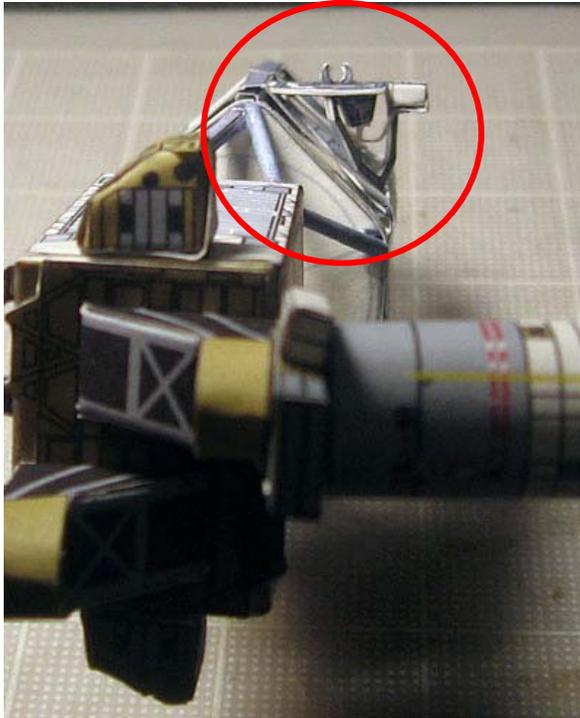




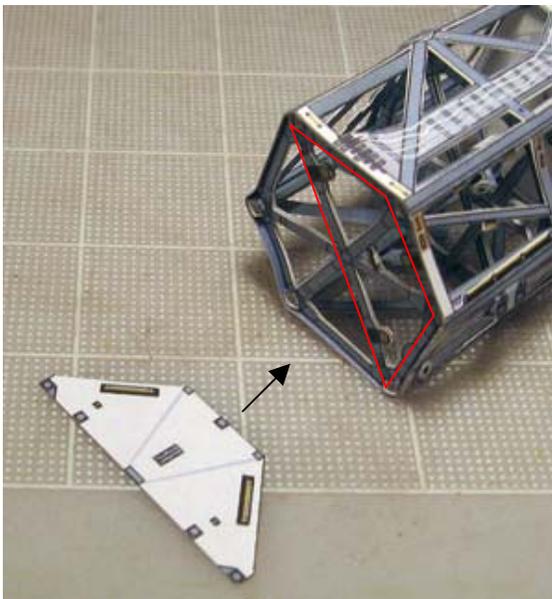
Note the position of the yoke when the UCCAS-PAS is assembled for space station version.



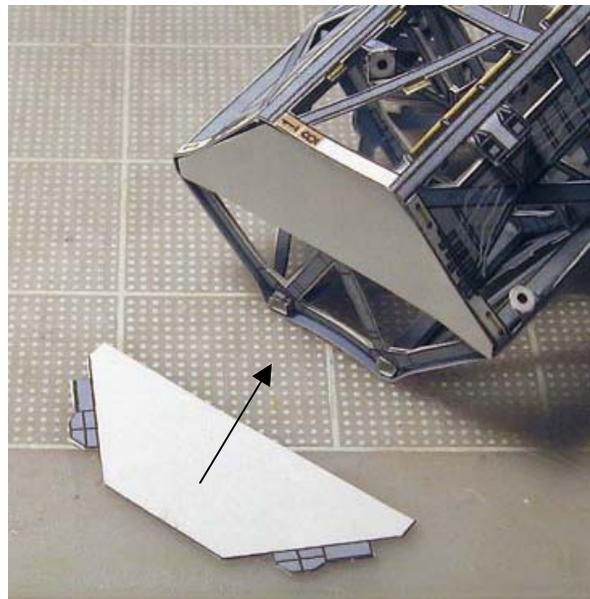




**Gluing the Connector surface**

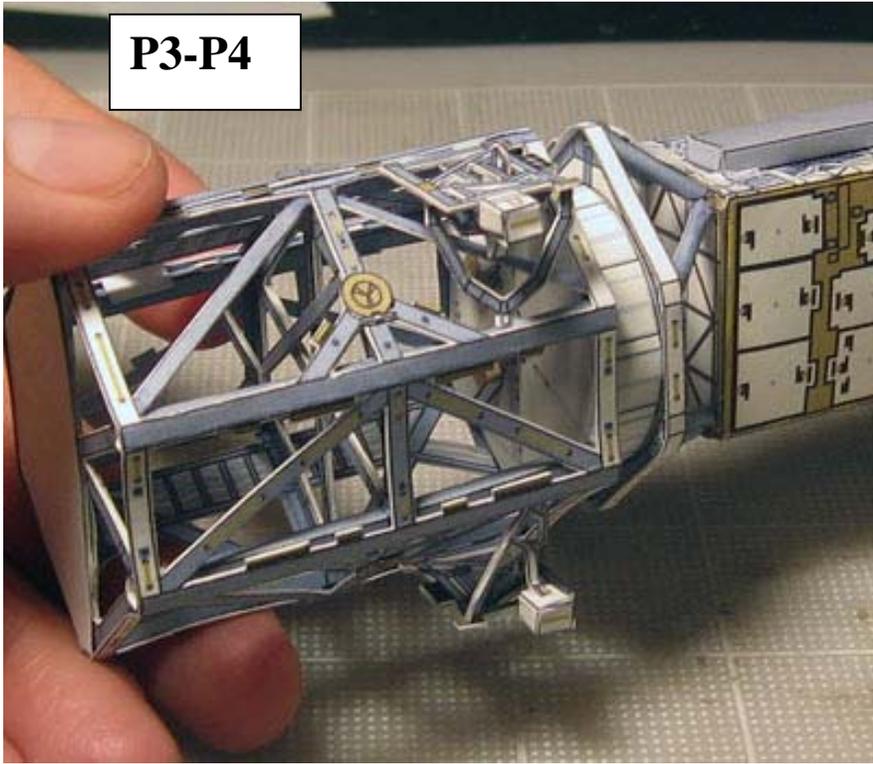


Glue the S1 or P1 side face copy

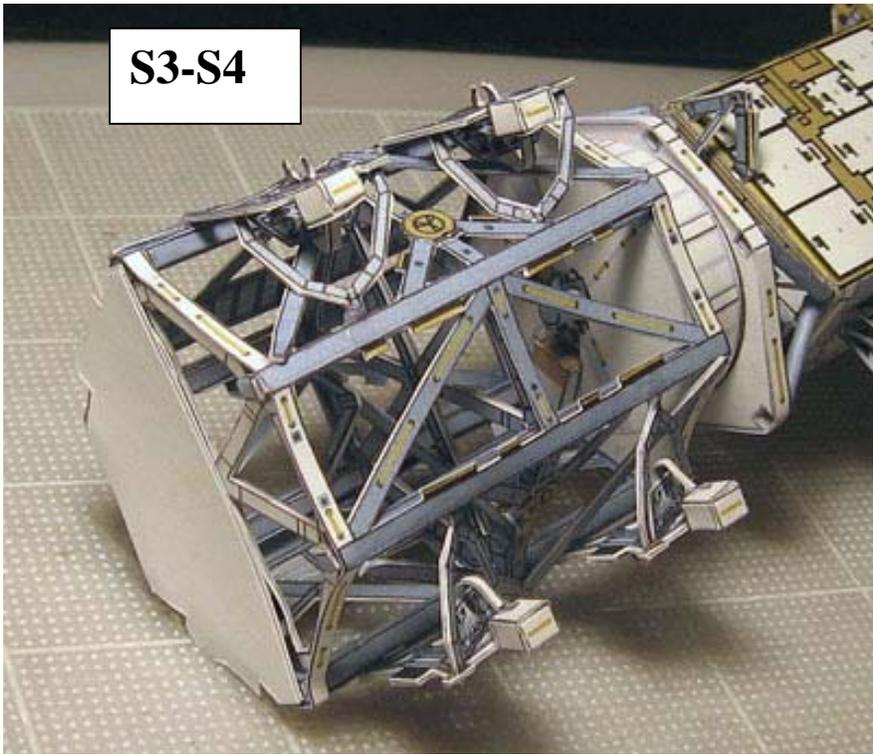


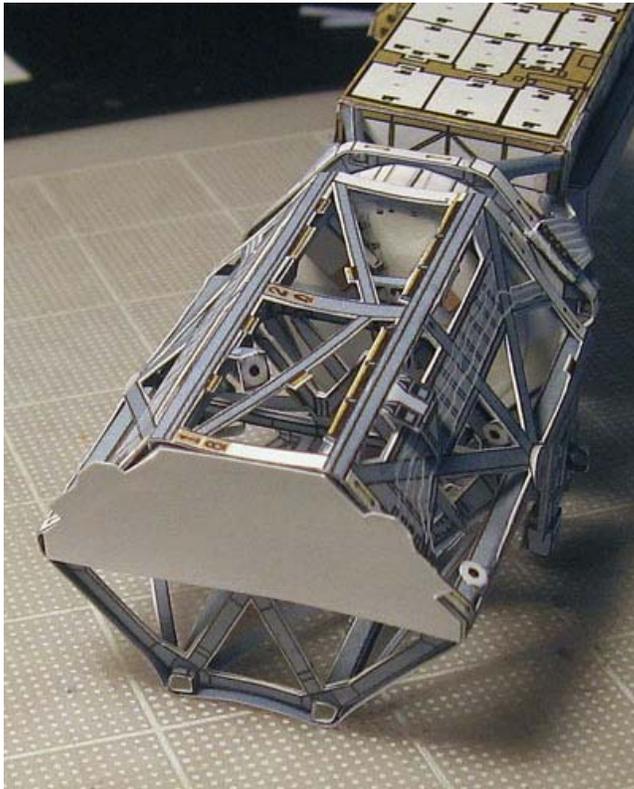
Glue the connector

**P3-P4**

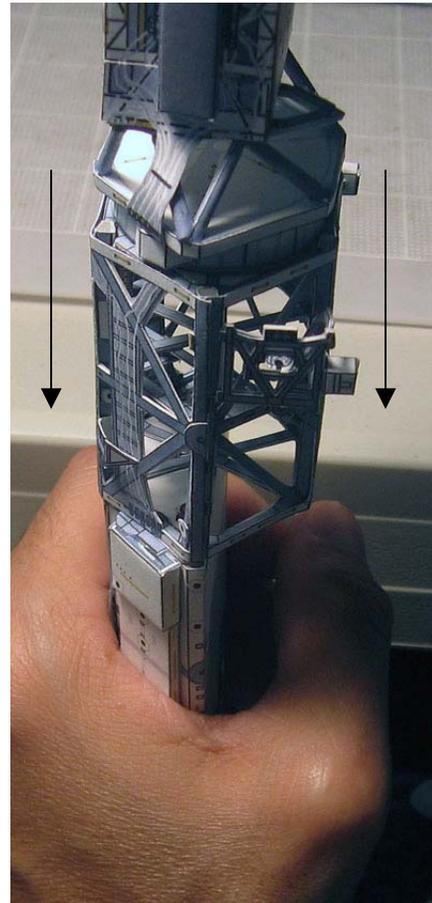


**S3-S4**



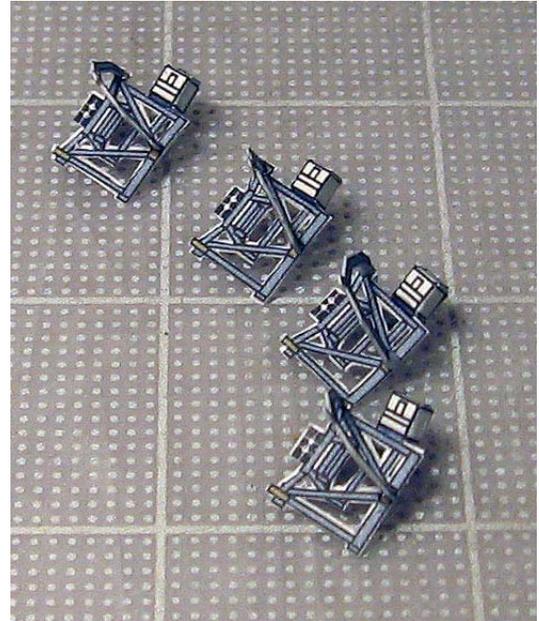
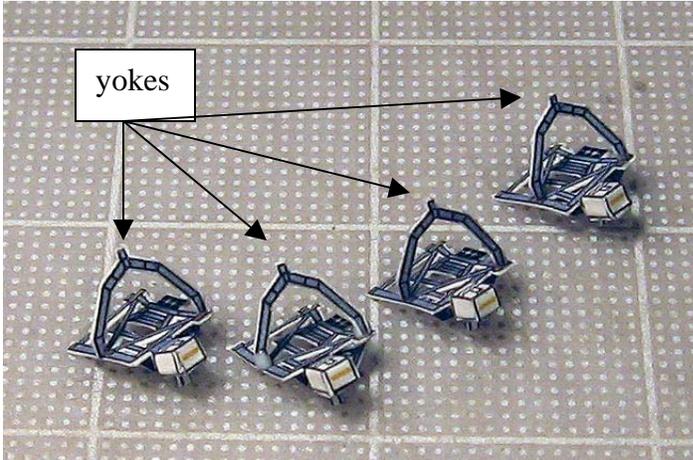


The side of the truss with the connector is then glued to either S1 or P1 truss. Match both faces and glue tight. Check that all sides line up well.

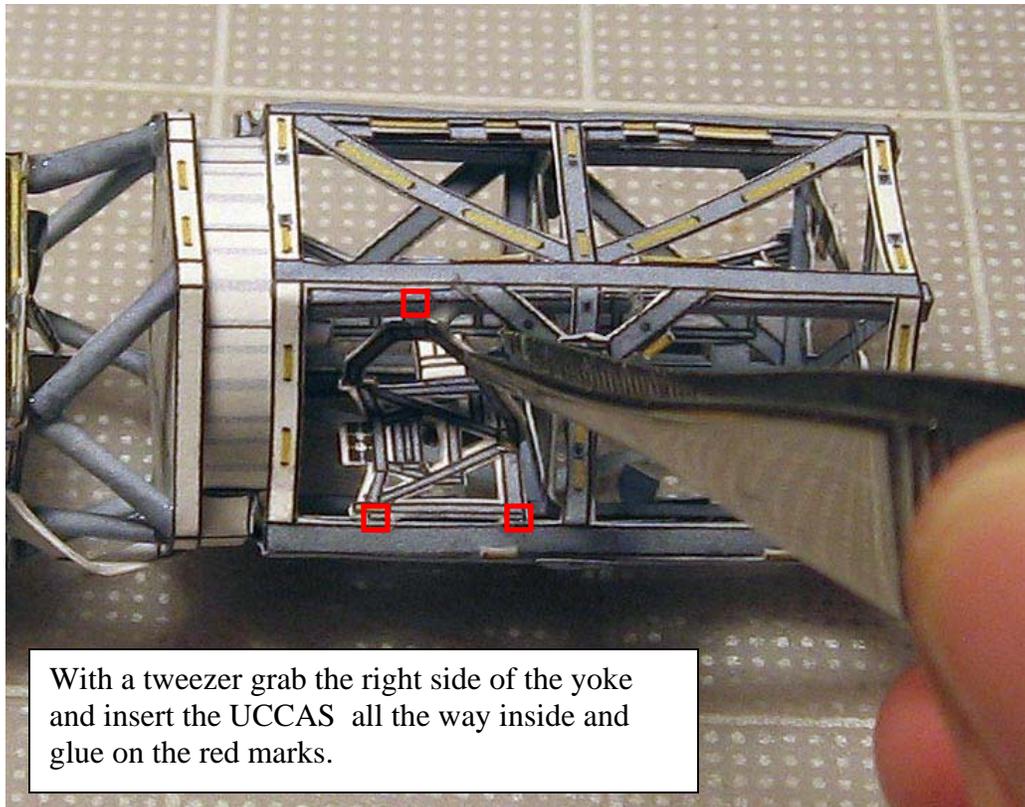


## ADDENDUM for STS-115 and STS-117

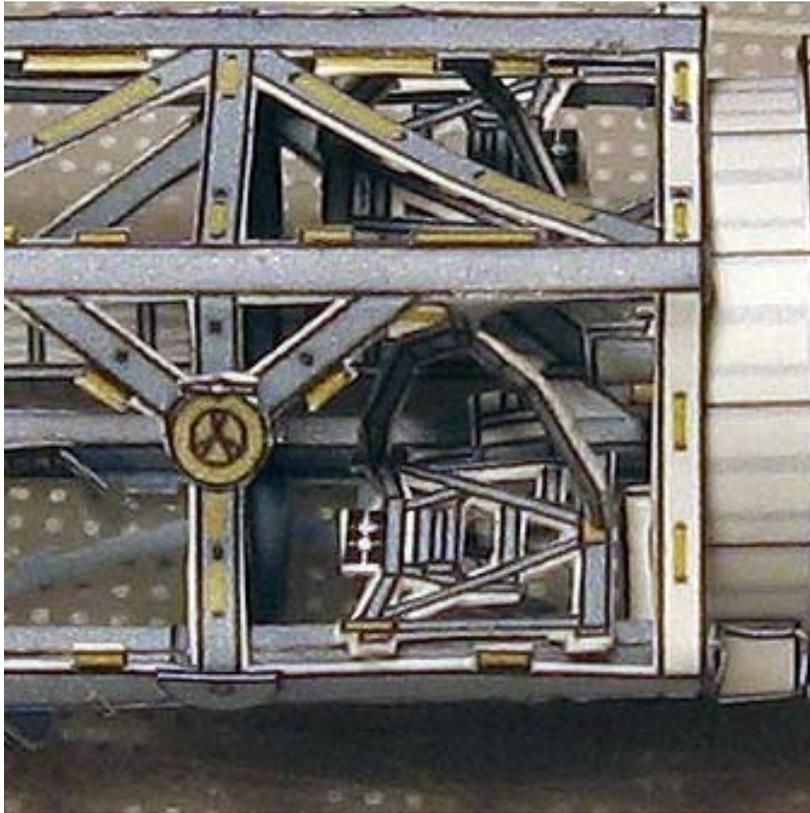
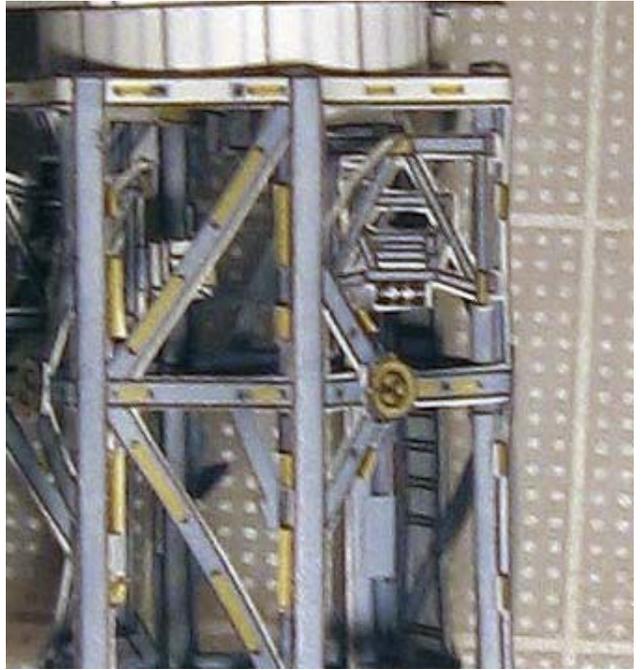
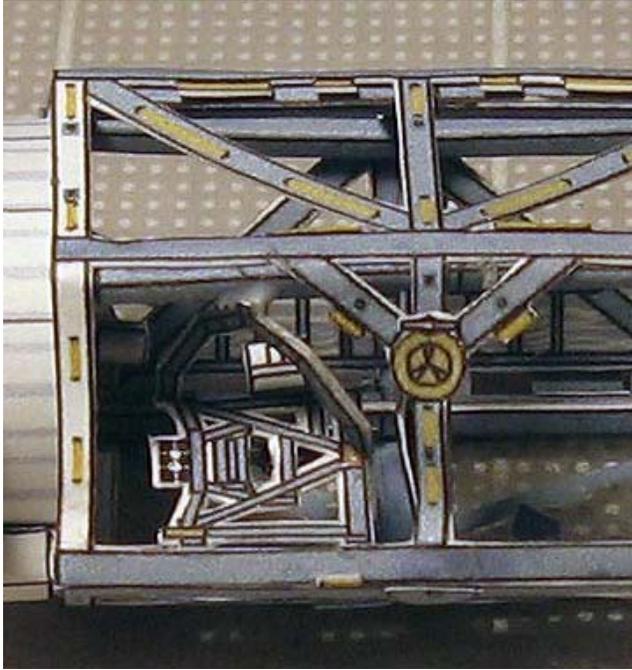
Installing the UCCAS/PAS on the payload bay version model (1:144 scale)



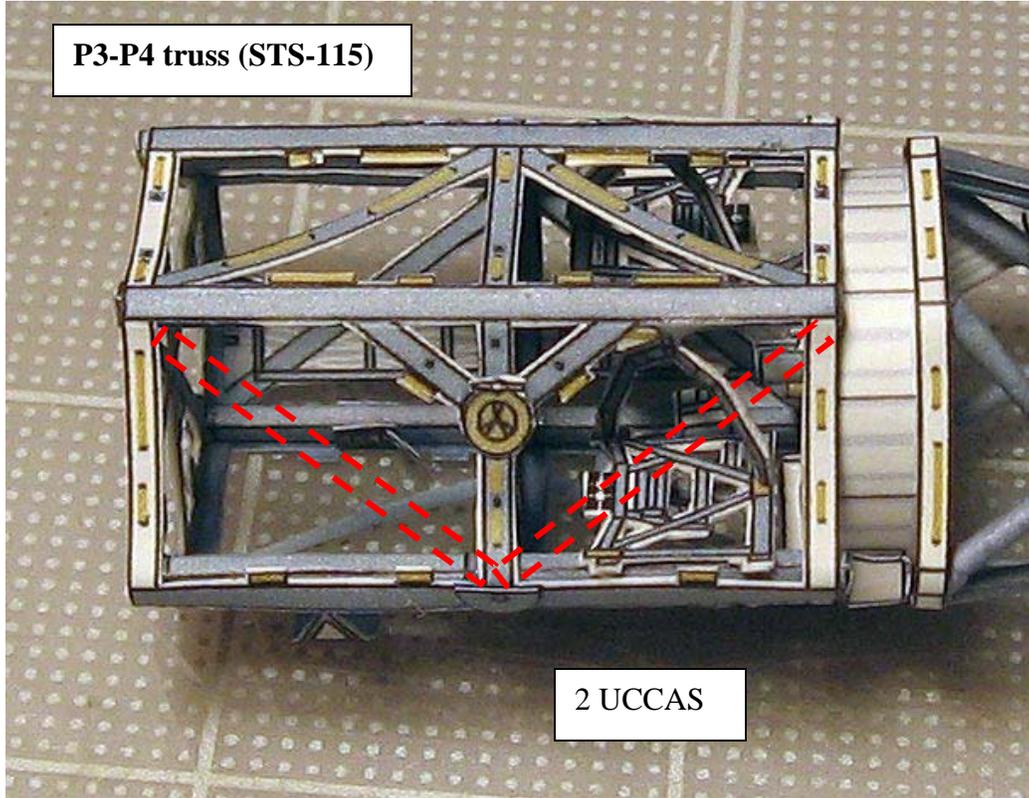
These are 2 views of the UCCAS/PAS. Notice the position of the yoke on top of the platform and the relationship with the white box.



With a tweezer grab the right side of the yoke and insert the UCCAS all the way inside and glue on the red marks.

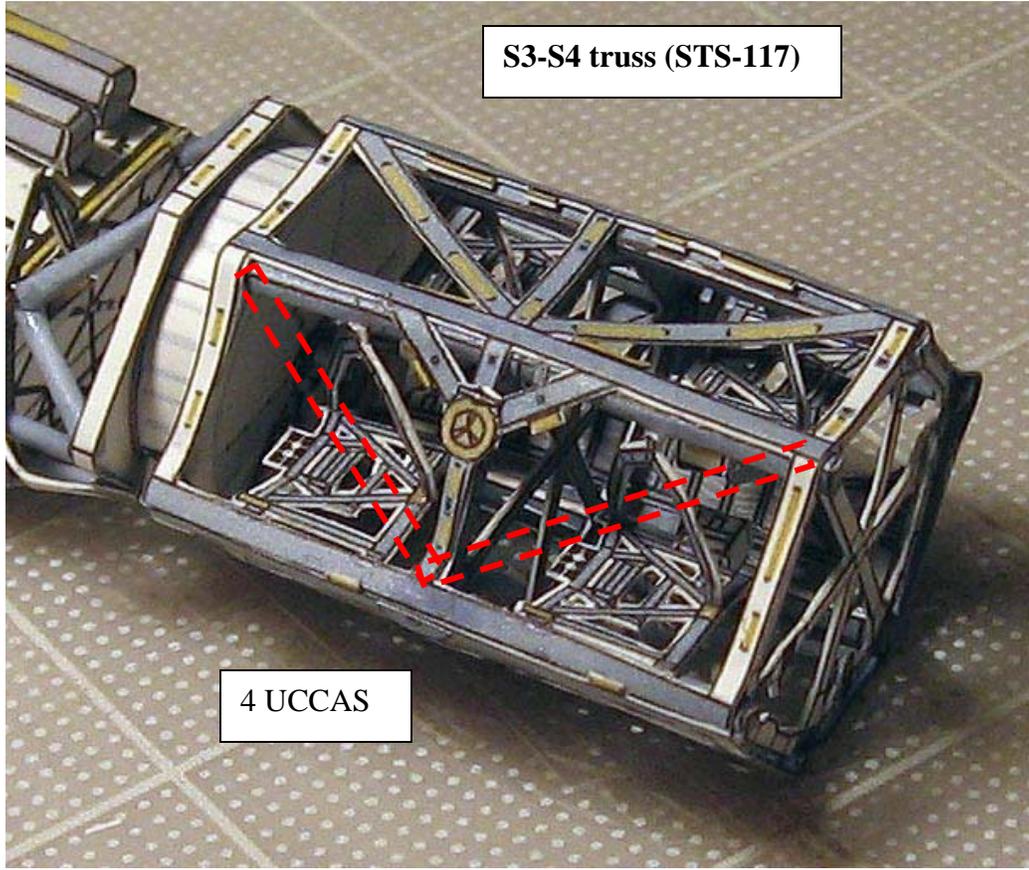


**P3-P4 truss (STS-115)**



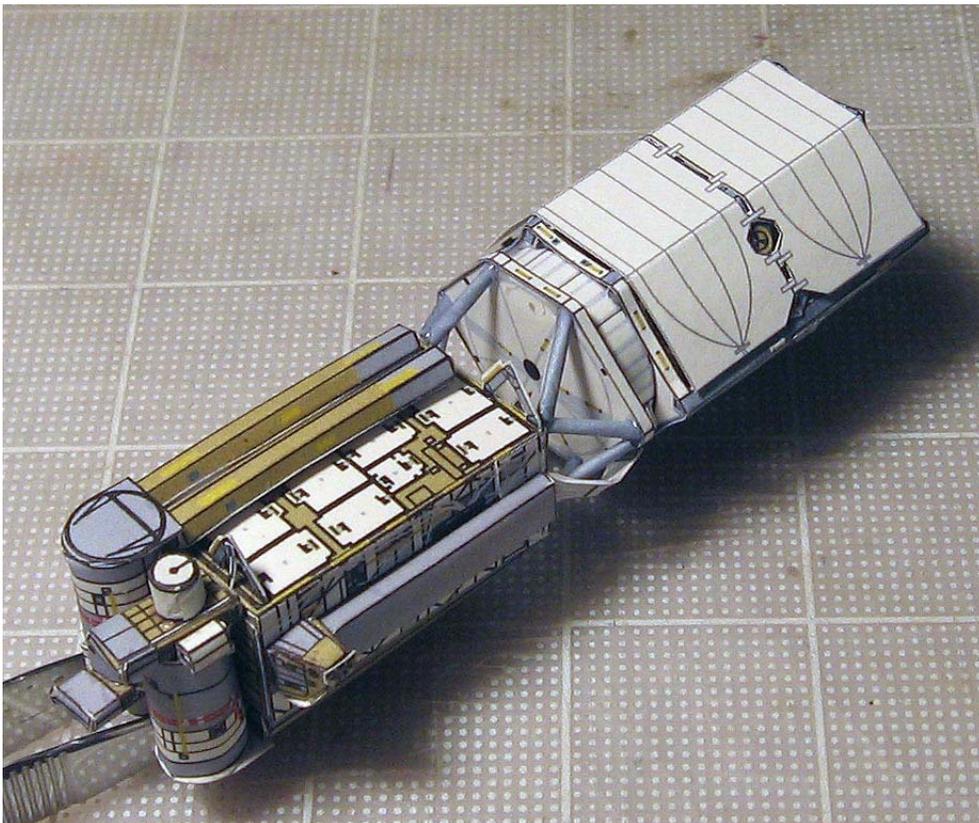
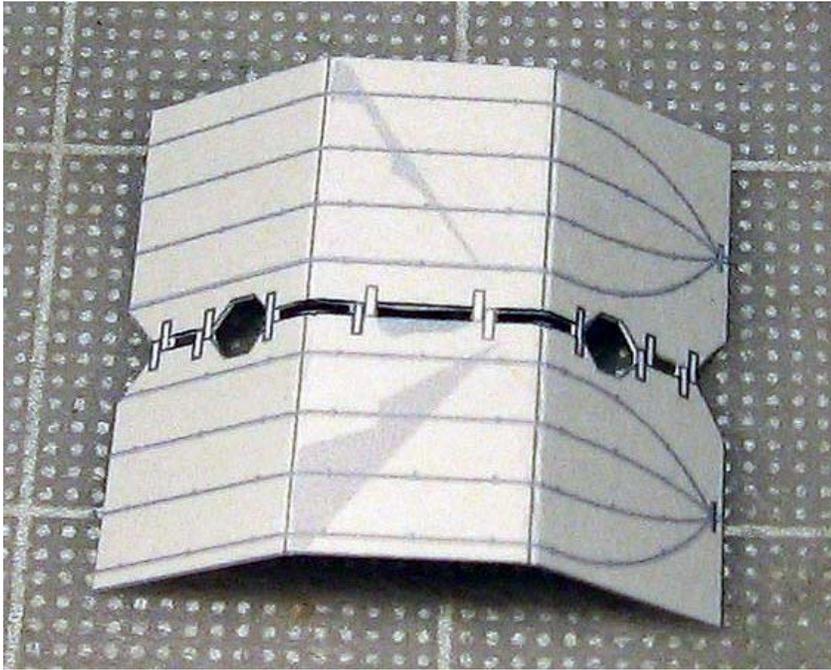
**2 UCCAS**

**S3-S4 truss (STS-117)**

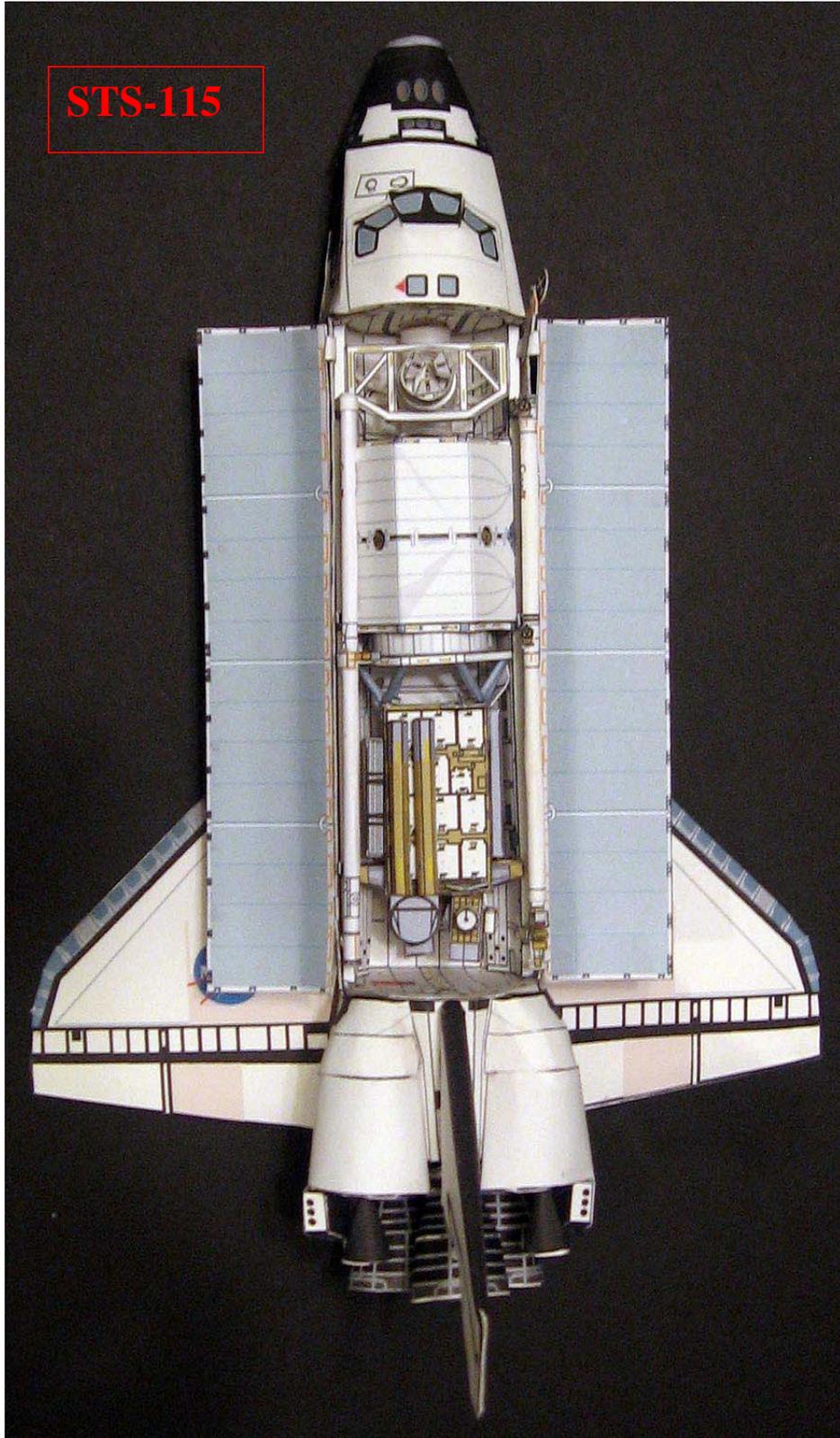


**4 UCCAS**

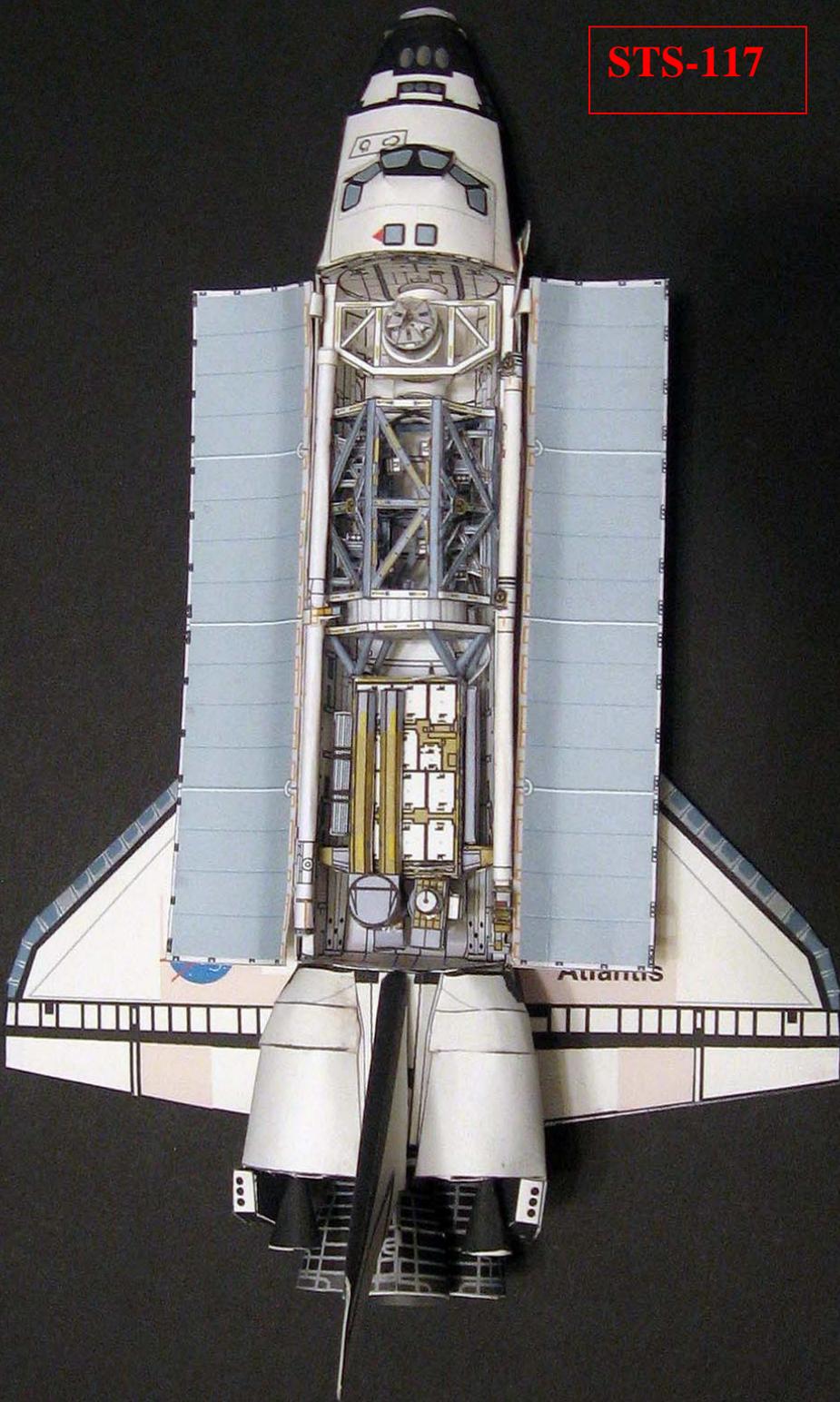
**Installing the thermal blanket for P3 segment only (STS-115)**

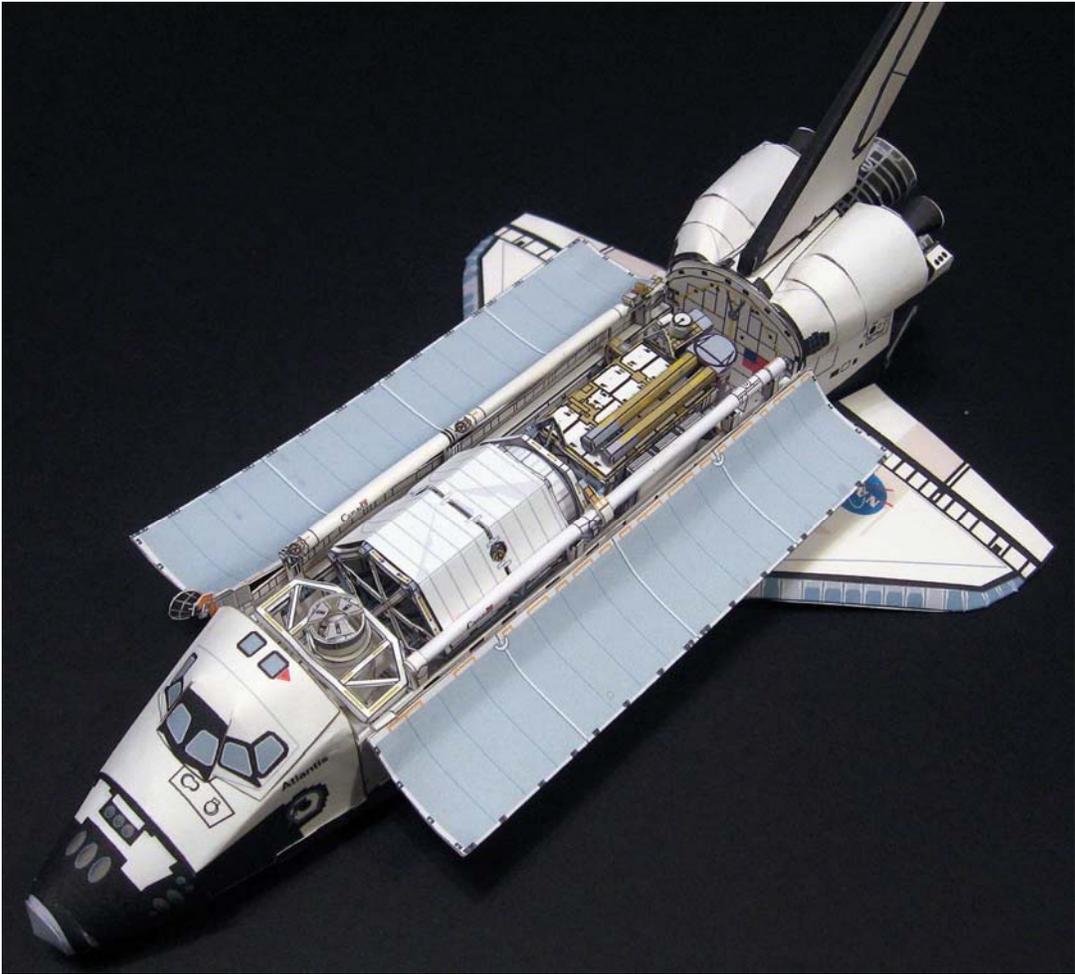


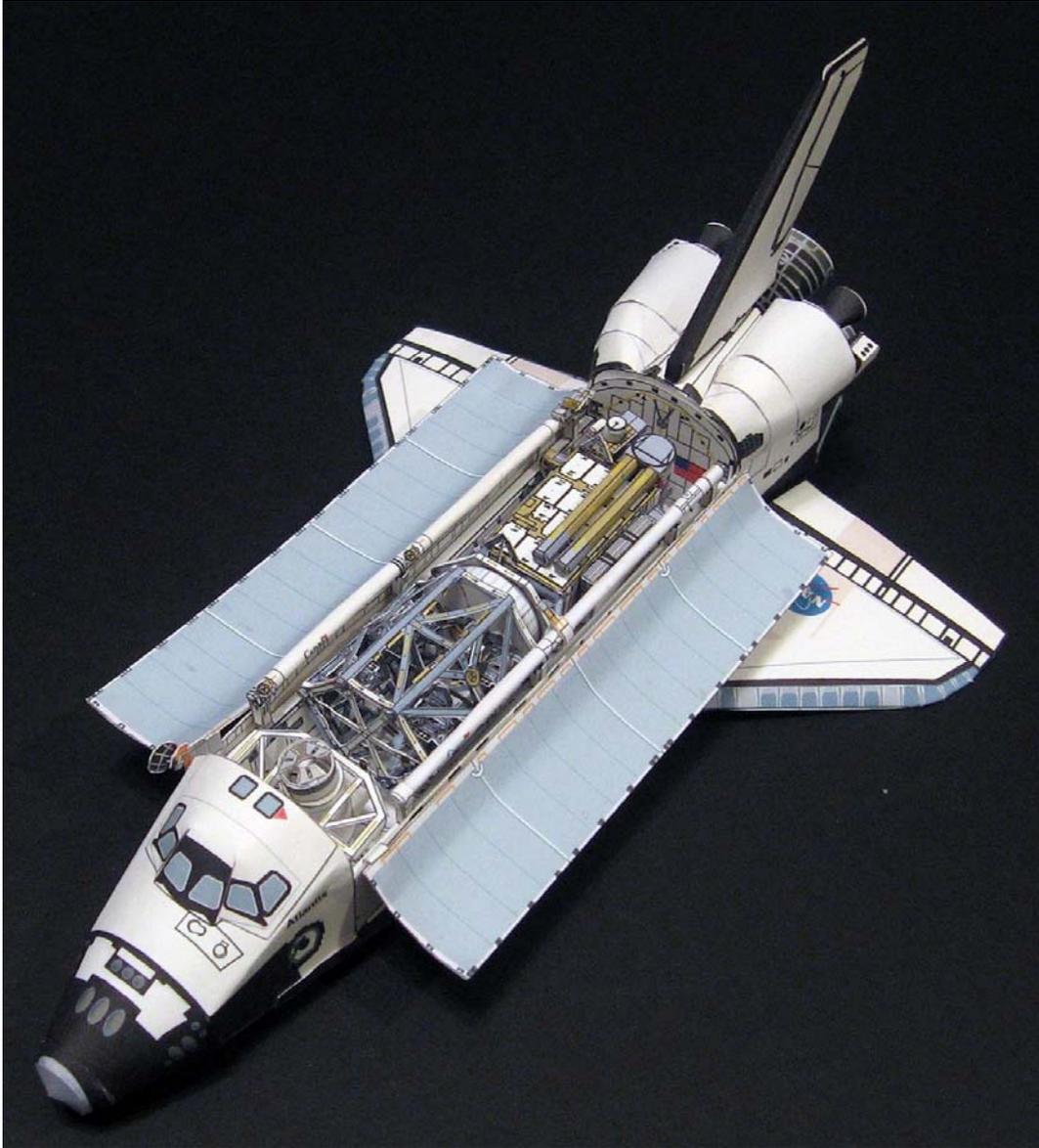
REFERENCE PHOTOS



STS-117







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