

MAVEN Spacecraft papermodel (1/25 scale)

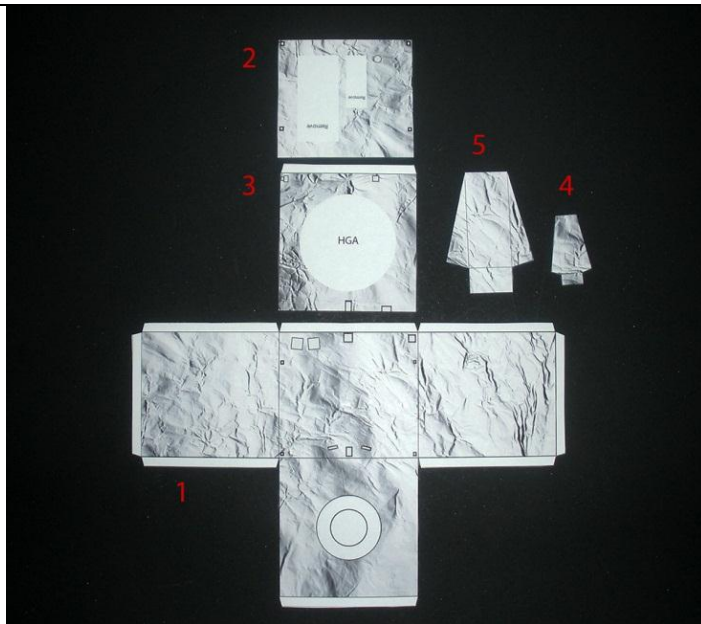
Building instructions

By Glenn Alvord - 2015



You may see a slight difference between the photos here and the actual model. Adjustments were made during the initial build to make the model look more realistic and hopefully better.

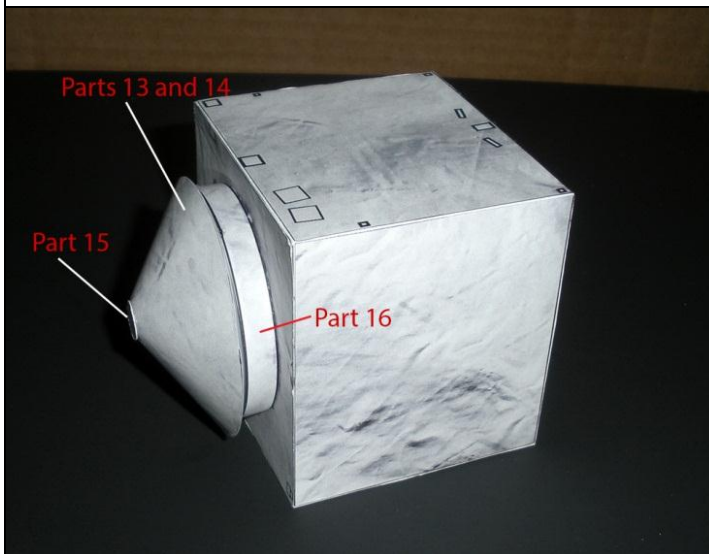
Enjoy.



Remove the white rectangles from PART 2.
Fold the flaps UP for PARTS 4 and 5.
Glue parts 4 and 5 into the matching openings on part 2
FROM THE BACKSIDE.



This is what it should look when complete. Notice the position of PARTS 4 and 5 in respect to the HGA circle. Large end of parts 4 and 5 are facing away from the HGA side and towards the rear of the spacecraft (Propulsion System).

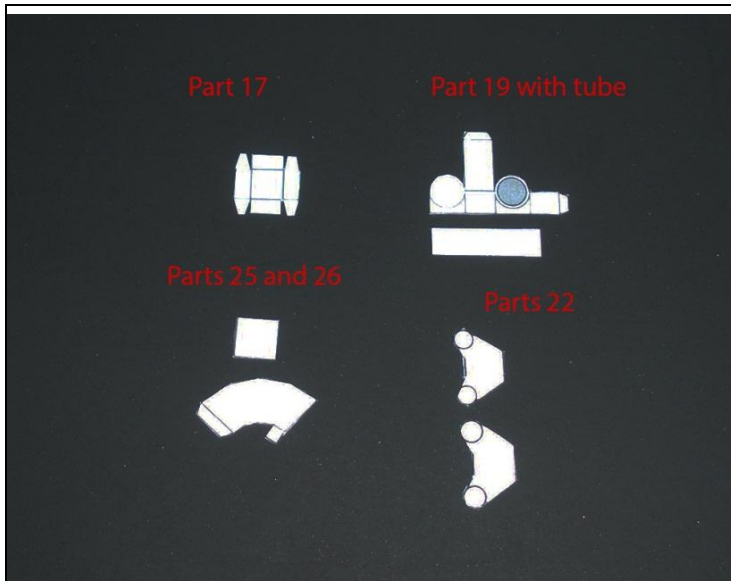


Cut out PARTS 13 – 16. Glue PARTS 13 and top of PART 14.
Glue PART 15 on top of the above assembly.
Roll PART 16 into a ring and glue over the HGA circle on the main body.
Glue the rest of the GHA assembly on top of part 16.



Color the backside of PARTS 29 and 30 black

Cut and roll PARTS 27 and 30 into shape.
Glue PART 28 on top of PART 27.
Glue PARTS 27 and 28 assembly on the Propulsion System side of the body (Opposite of the HGA).
Glue PART 30.
Cut, roll and glue PARTS 29 into 6 small nozzles and glue them over the 6 dots on PART 28.



Color backside of PARTS 26 and the tube for part 19 black

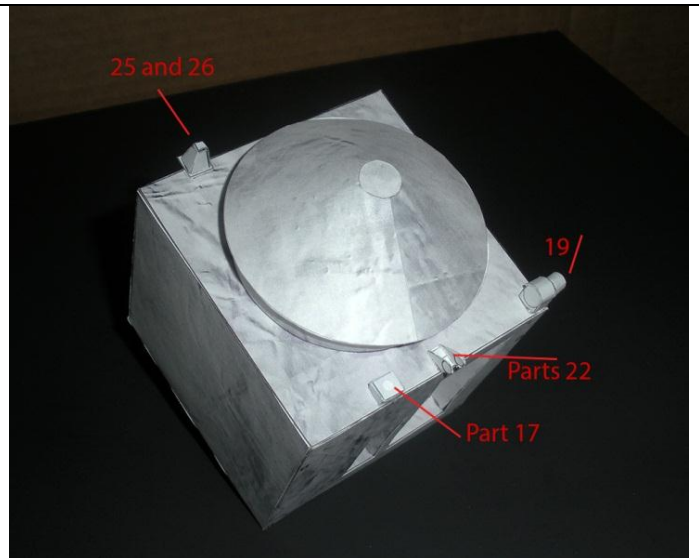
Glue PART 17 into a shallow box. Glue PART 19 into shape, roll the tube and glue it on the grey spot on PART 19. Fold PART 25 in half for strength, Fold PART 26 into a square tube.

Glue PART 26 on top of PART 25.

PART 22 hinges has two pieces – fold the larger one with the graphics to the OUTSIDE and the smaller one with the graphics on the INSIDE.

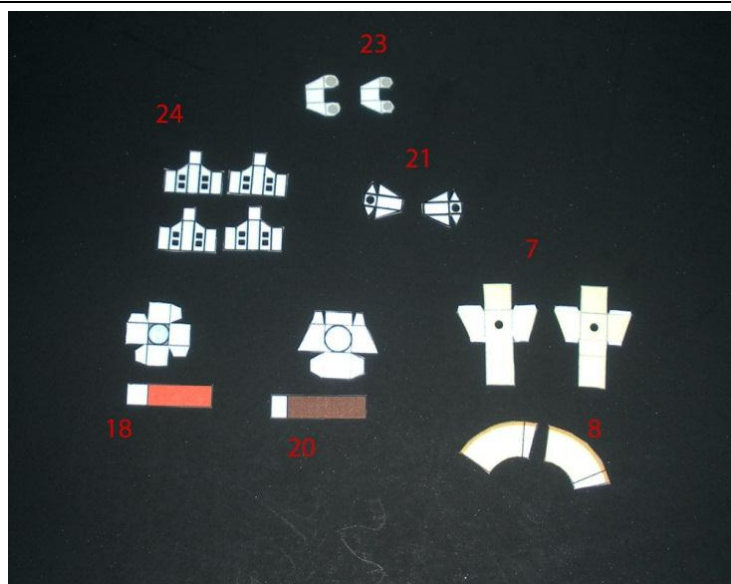
Glue the smaller one INSIDE the larger piece.

This will give it strength to hold the instrument package onto the spacecraft.



Glue the parts you just made over the graphics on the HGA side of the spacecraft as shown above.

PARTS 25 – 26 assembly hangs half-way off the main body (See pic above).



Color backside of PARTS 8, 18 and 20 black

Follow the same procedures you did for PARTS 22 for PARTS 23 hinges here.

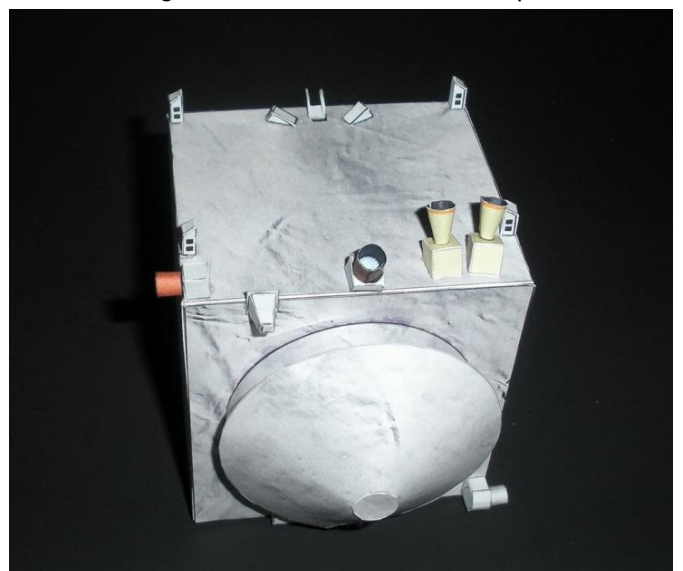
Glue PARTS 24 into rectangle tubes.

Glue PARTS 21 into angled brackets.

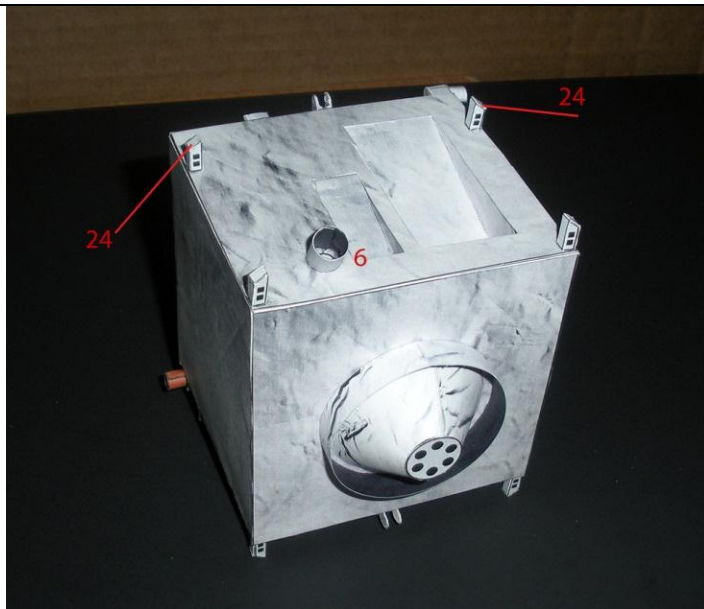
Glue PART 18 into a box and roll the orange strip into a tube and glue it onto part 18

Do the same for PART 20 assembly.

Glue PARTS 7 into angled boxes, roll PARTS 8 into nozzles and glue them on the small dot on part 7.



Glue these onto the graphics on top of the body as shown above. Angle side of PART 24 faces out.

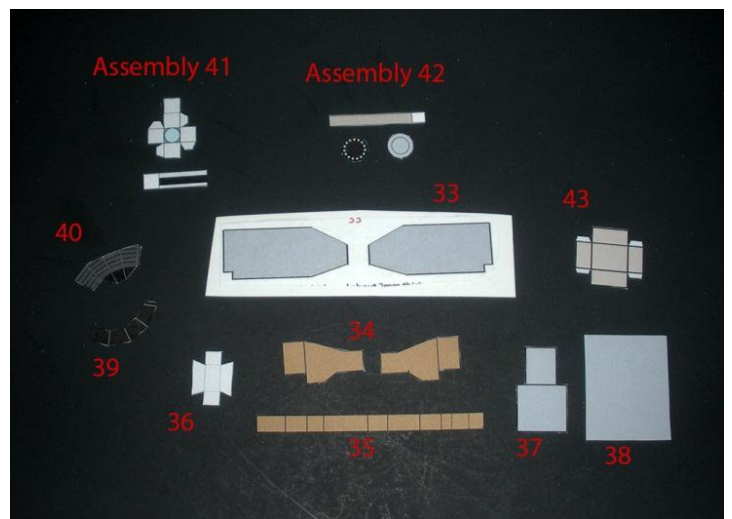


Color the backside of PART 6 black

Roll PART 6 into an angled tube.

Make 4 more of PART 24.

Glue these onto the graphics on the bottom of the body shown above. Open end of PART 6 should be face towards to back of the spacecraft.



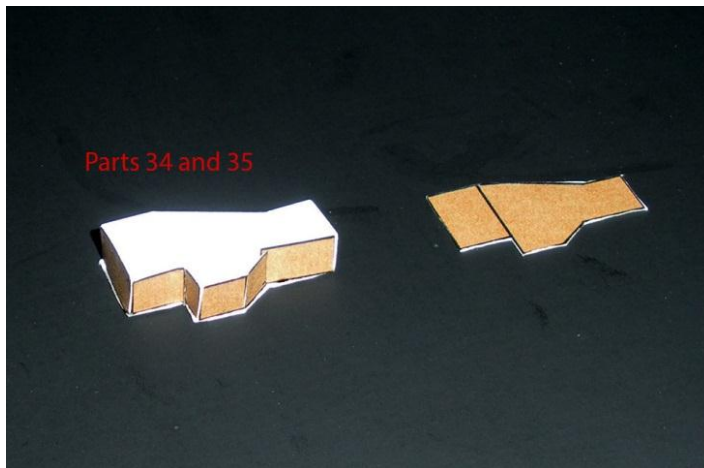
Color backside of PARTS 39, 40 and the tube for ASSEMBLY 41 black.

Glue PARTS 39 and 40 into square nozzles.

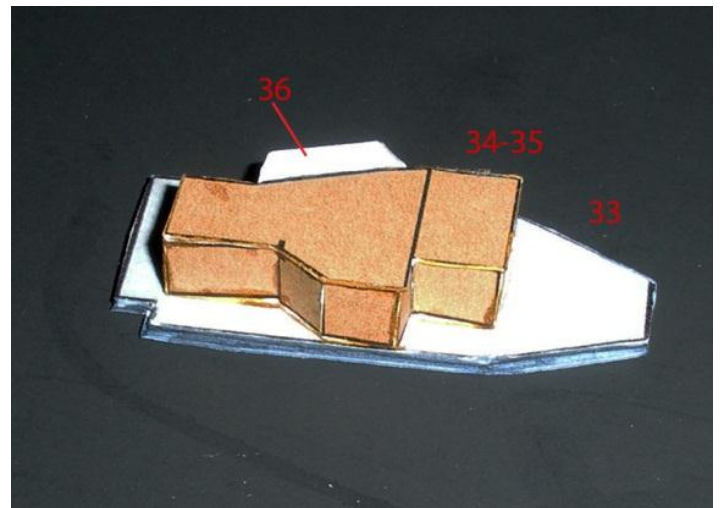
Glue both PARTS 33 onto thick cardstock. Cut and glue them with the color towards to outside. Final thickness should be between 2 and 3mm.

PART 38 give PARTS 38-39 assembly colors on both sides.

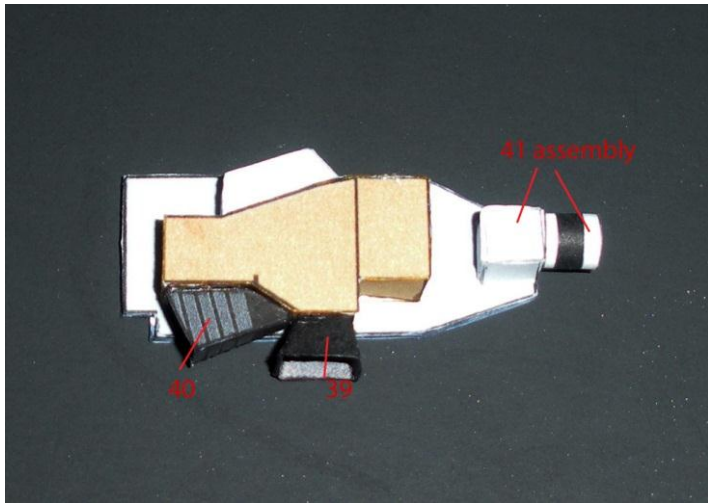
Glue PART 38 into thick cardstock and glue PART 37 on the BACKSIDE. Cut part 37 into shape shown. Assemble other parts shown above.



Score PART 34 and glue it around the edges of PART 35. When dry, glue other side for parts 34 in place. I made these from scratch and as accurate as possible, only a few pics were available.



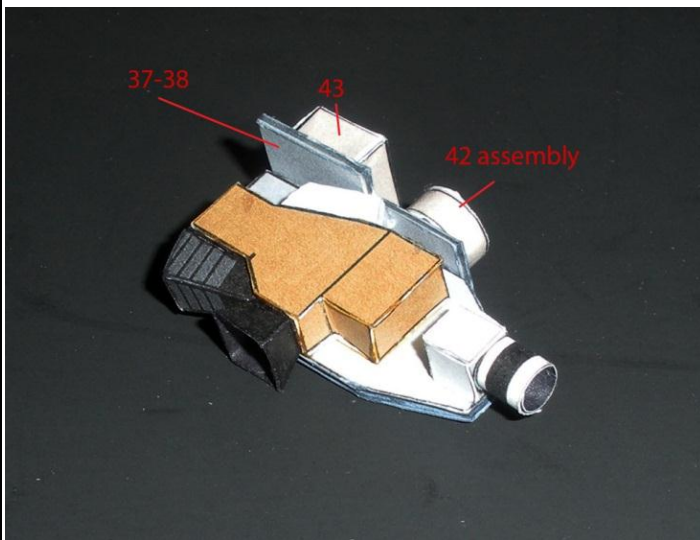
Glue assembly 34-35 onto 33 assembly shown above. Glue PART 36 onto 34-35 shown above.



Glue 41 assembly, 39 and 40 into place shown above.

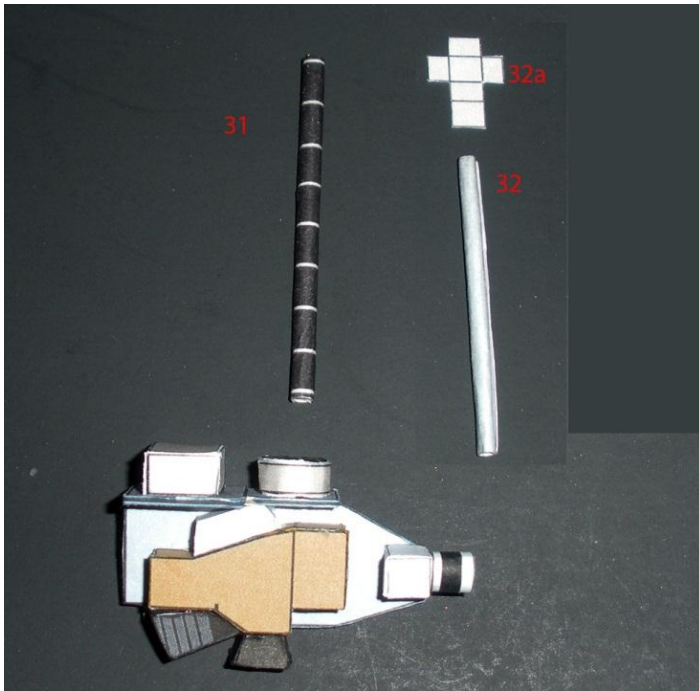


Another look from previous pic.

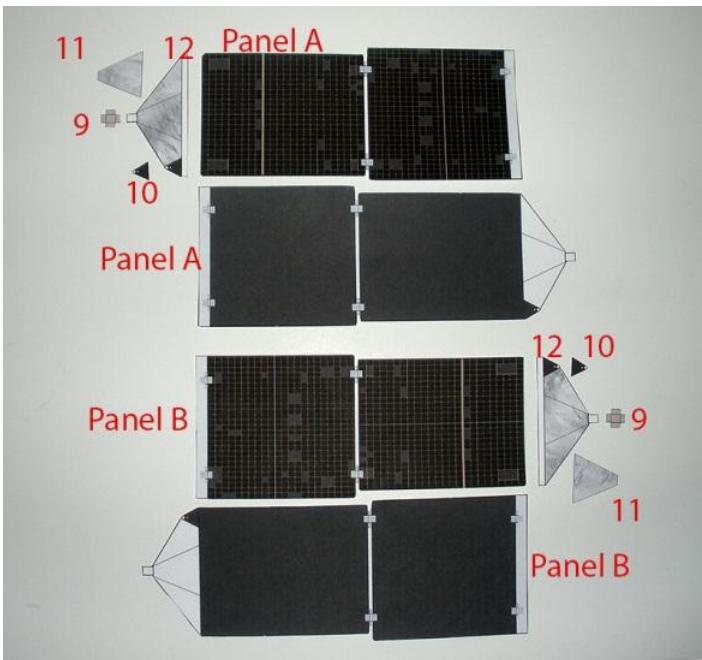
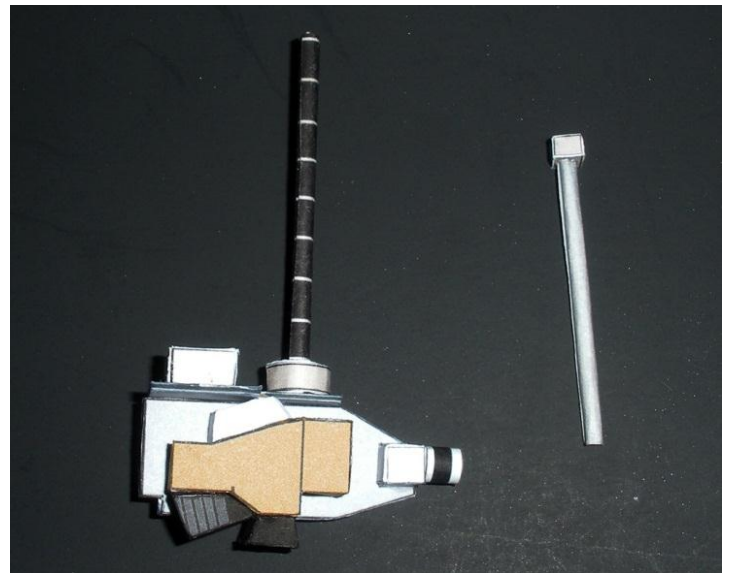


Glue 37-38 into place.
Glue 42 assembly into a drum and glue it on top as shown with the black side up.
Glue 43 on the back end. See the next picture.





Roll PART 31 around a tooth pic for strength and glue it to top of 42.
Roll 32 into a long tube and glue 32a end the end of 32.
See the next picture.



SOLAR PANELS

To me, the solar panels makes a huge difference on the appearance of the spacecraft model due to its unique bend and a magnetometer on each end.

I made them from scratch and tried to make them as accurate and detailed as possible and it took me a long time to do it.

Solar Panels...

NOTE – always pay attention to the orientation of the small dark triangle at the end of each panel.

The LEFT panel – triangle is on the BOTTOM.

The RIGHT panel – triangle is on the TOP.

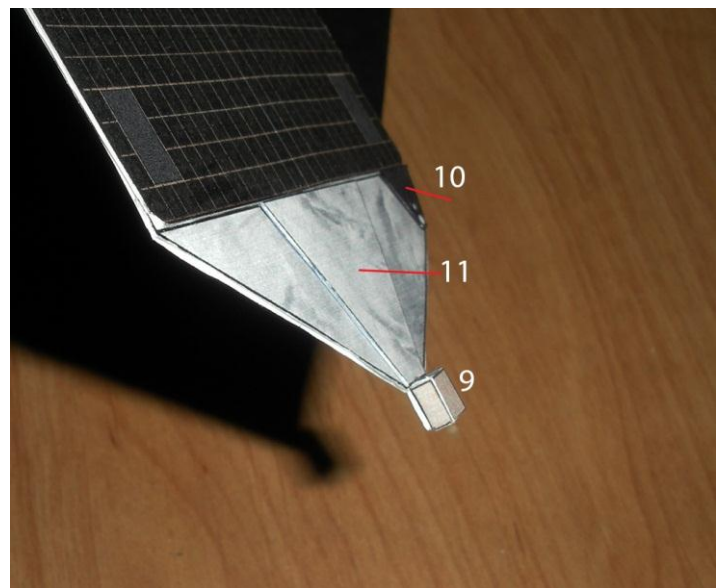
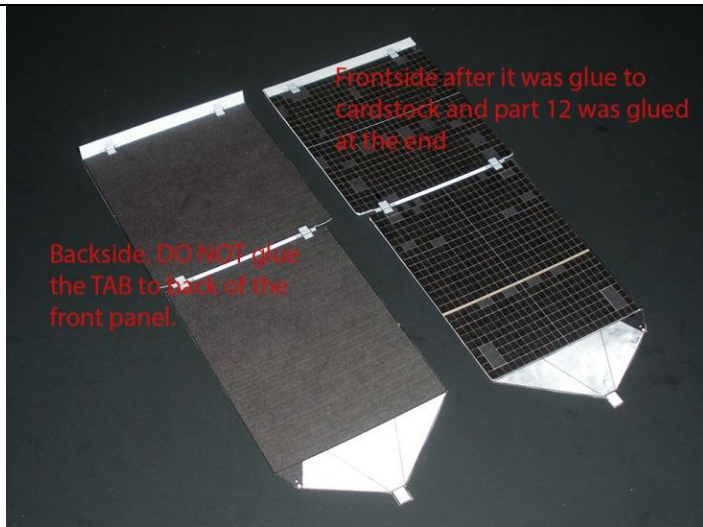
Glue the front side of the solar panels (With the grid graphics) onto another layer of the same cardstock as they were printed on and then cut them cut to shape.

Glue PART 12 to the BACK OF THE FRONT panels you just added another layer of cardstock with the ends sticking out.

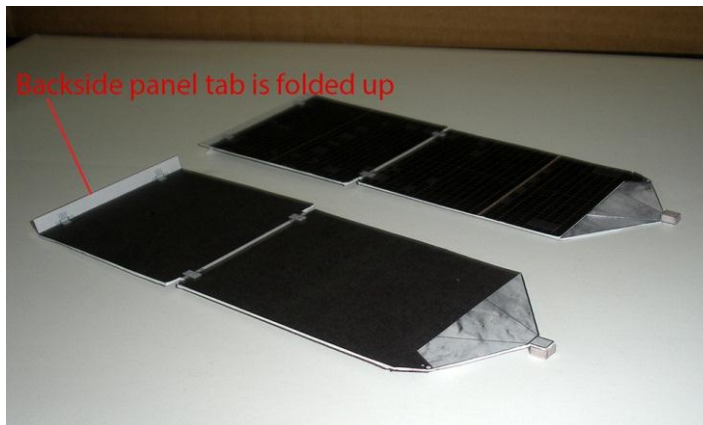
Glue the PANEL BACKSIDE to the back, BUT NOT THE TAB, it will be used to help hold the solar panels onto the spacecraft.

Make sure the dark triangle on the back matches the one on the front.

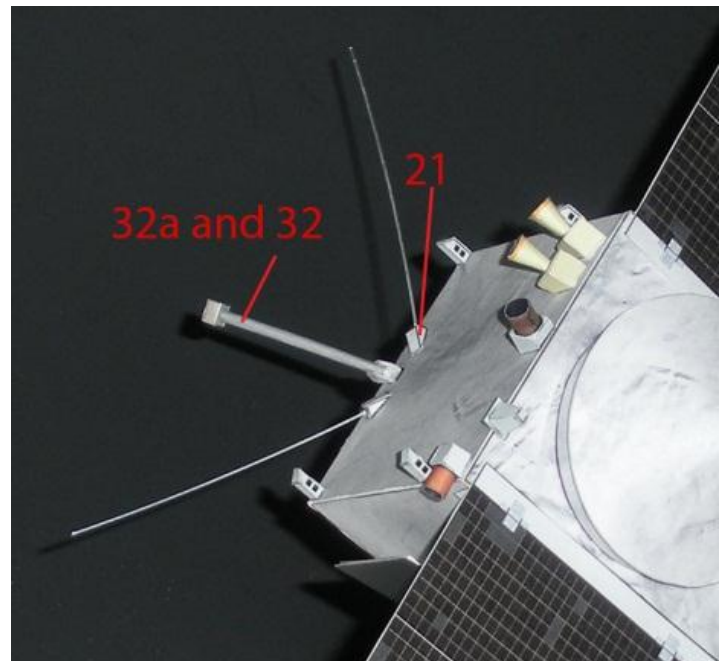
See the following picture on how it should look like.



Glue PARTS 10 and 11 onto same cardstock they were printed on. Cut and glue them over the matching graphics. Fold PART 9 into a box and glue it over the small square at the end of the magnetometer.

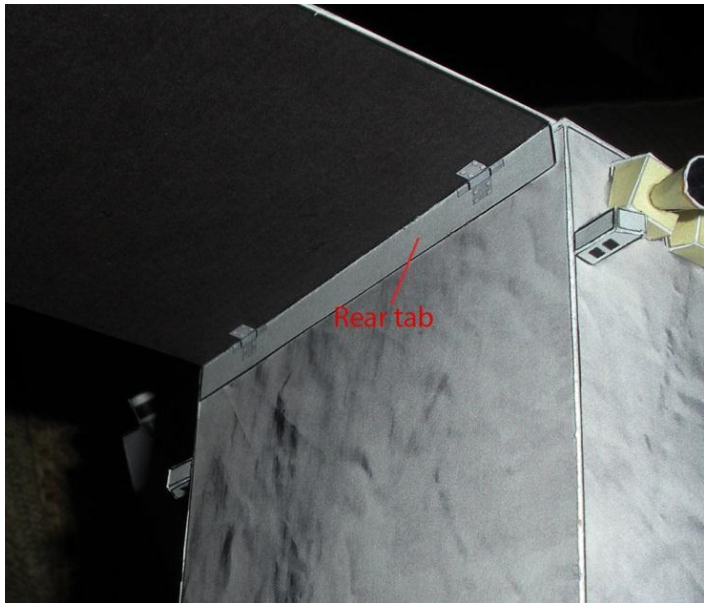
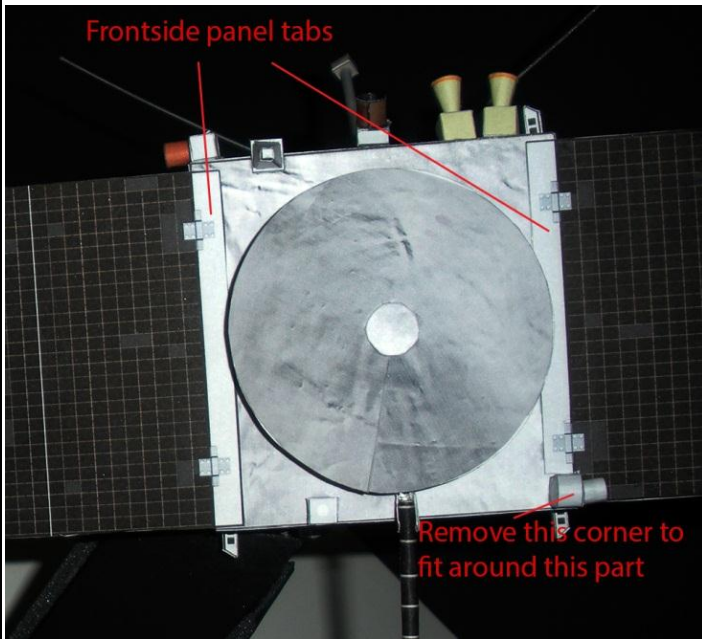


Above shows the completed solar panels. Tabs on the back are folded away for mounting onto the spacecraft along with the tabs on the frontside of the solar panels.



Punch a small hole on the small dot on PART 21. I use a PLASTIC STRAW FROM A BROOM painted grey or silver and glue it into the holes at an angle shown above.

Glue 32a-32 assembly onto PART 23 hinge leaning towards ot back.

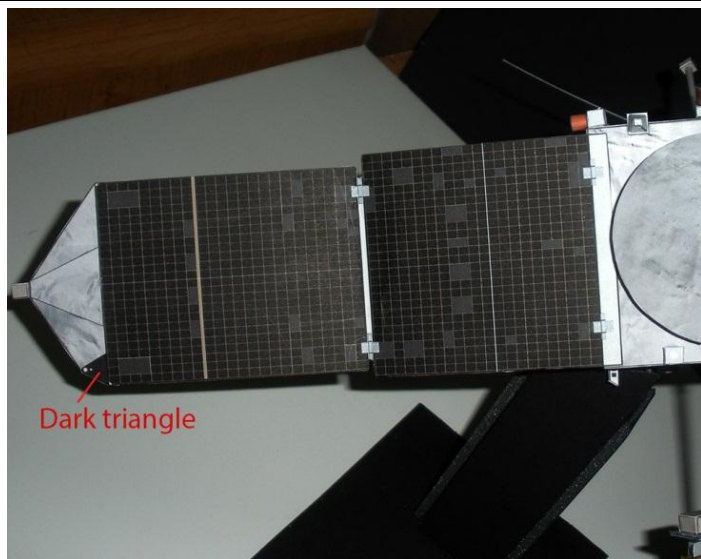


Rear tabs

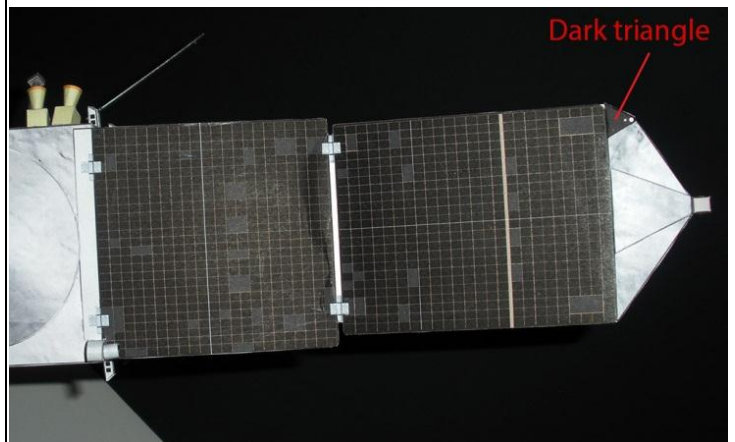
Mount the solar panels.
First cut out the lower corner from the RIGHT solar panel KEEPING THE DARK TRIANGLE on the magnetometer TO THE TOP to fit around the part shown above.

Bend both solar panels at the middle hinges 20-degrees inward.

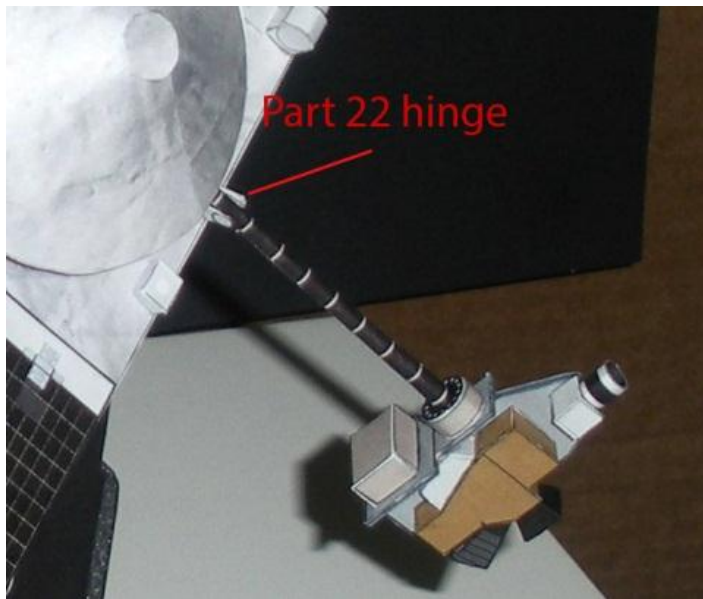
Glue onto the spacecraft shown on the next picture using the front and rear tabs on the solar panels.



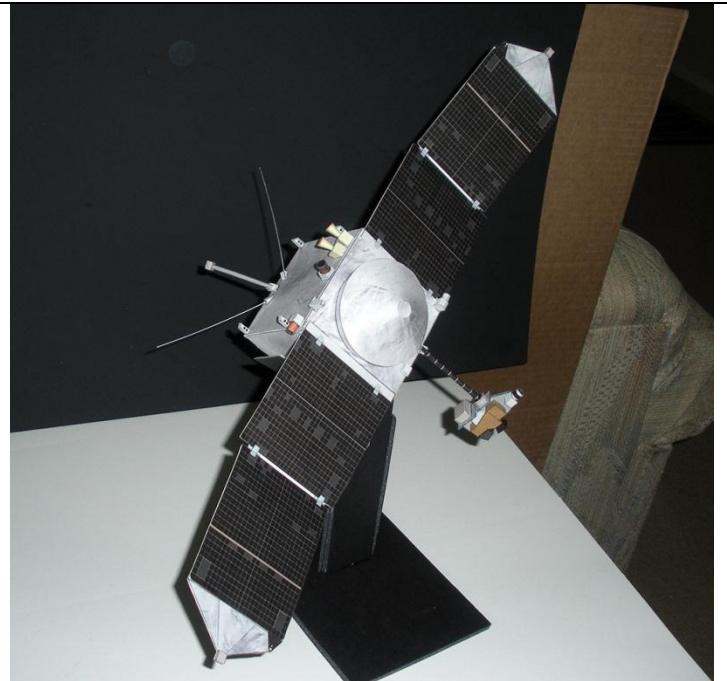
Left side – dark triangle on the magnetometer is on the BOTTOM.



Right side – dark triangle on the magnetometer is on the TOP.



Glue the main instrument assembly to the PART 22 hinge as shown above at the bottom-front of the spacecraft. You can orient this anyway you wish.



Your model is complete, Congrats!

