

GOES-R Satellite (Geostationary Operational Environmental Satellite - R Series)



NOAA's next generation of geostationary weather satellites

GOES-R (Geostationary Operational Environmental Satellite-R Series) is a new tool that will revolutionize weather forecasting.

It is the first in a series of next-generation Geostationary Operational Environmental Satellites for NOAA -- the National Oceanographic and Atmospheric Administration.

GOES-R will significantly improve the detection and observation of environmental phenomena that directly affect public safety, protection of property and our nation's economic health and prosperity.

The satellites will provide advanced imaging with increased spatial resolution and faster coverage for more accurate forecasts, real-time mapping of lightning activity, and improved monitoring of solar activity.

The GOES-R series is a four-satellite program (GOES-R/S/T/U) that will extend the availability of the operational GOES satellite system through 2036. It marks a technological advance in geostationary observations. Compared to the current GOES system, the advanced instruments and data processing provides:

- Improved hurricane track and intensity forecasts
- Increased thunderstorm and tornado warning lead time
- Better detection of heavy rainfall and flash flooding risks
- Improved aviation flight route planning
- Improved air quality warnings and alerts
- Better fire detection and intensity estimation
- Improved solar flare warnings for communications and navigation disruptions
- More accurate monitoring of energetic particles responsible for radiation hazards to humans and spacecraft
- Better monitoring of space weather to improve geomagnetic storm forecasting.
- Three times more spectral information
- Four times greater spatial resolution
- Five times faster coverage
- Real-time mapping of total lightning activity

Once in geostationary orbit, GOES-R will be known as GOES-16 and will provide images of weather patterns and severe storms as regularly as every five minutes or as frequently as every 30 seconds. These images can be used to aid in weather forecasts, severe weather outlooks, watches and warnings, lightning conditions, maritime forecasts and aviation forecasts. It also will assist in longer term forecasting, such as in seasonal predictions and drought outlooks.

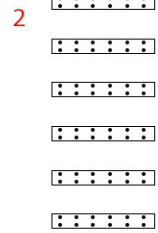
In addition, space weather conditions will be monitored constantly, including the effects of solar flares to provide advance notice of potential communication and navigation disruptions. It also will assist researchers in understanding the interactions between land, oceans, the atmosphere and climate.

It was launched into orbit aboard a United Launch Alliance Atlas V rocket Saturday, Nov. 19, 2016. The one-hour launch window opens at 5:42 p.m. EST. Liftoff will occur from Space Launch Complex 41 at Cape Canaveral Air Force Station in Florida. It will be followed by GOES-S in 2018, GOES-T in 2019 and GOES-U in 2024.

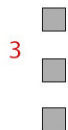


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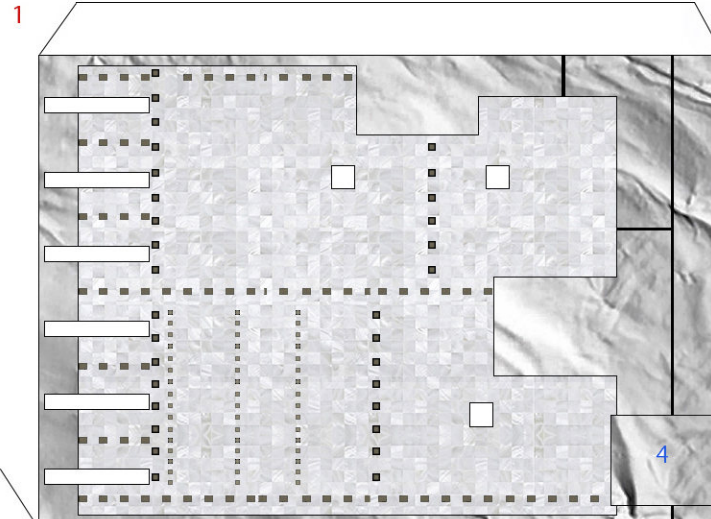
Reinforce the body with cardstock for strength before gluing together.



Glue to two layers of thick cardstock



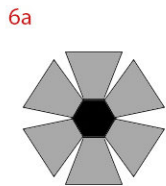
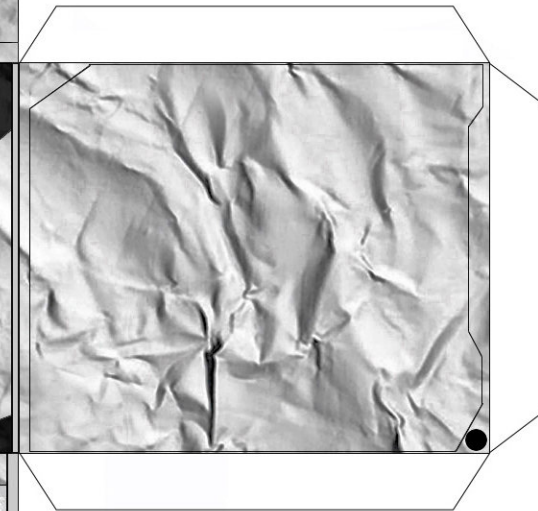
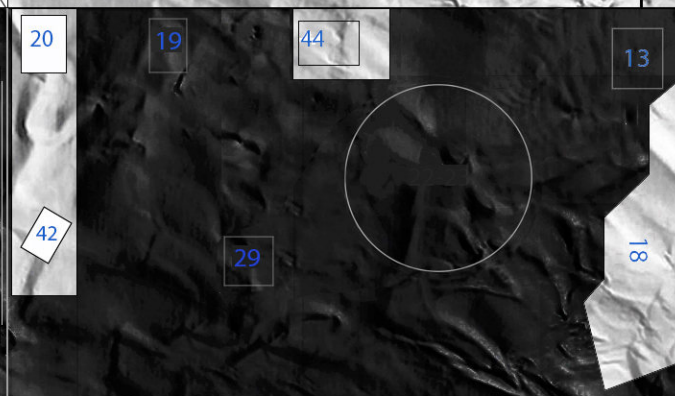
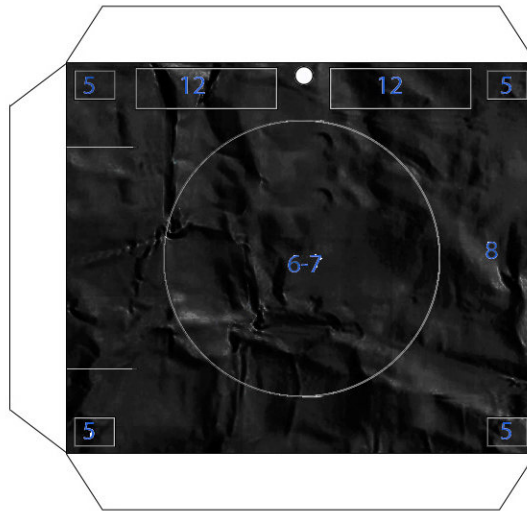
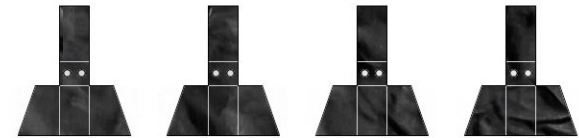
Glue to thick cardstock



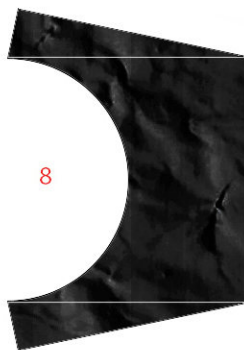
Glue to two layers of thick cardstock



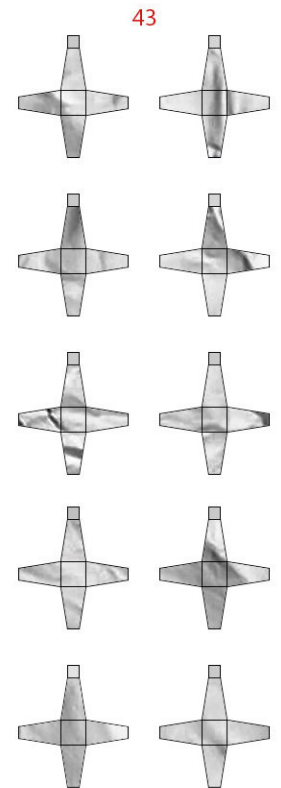
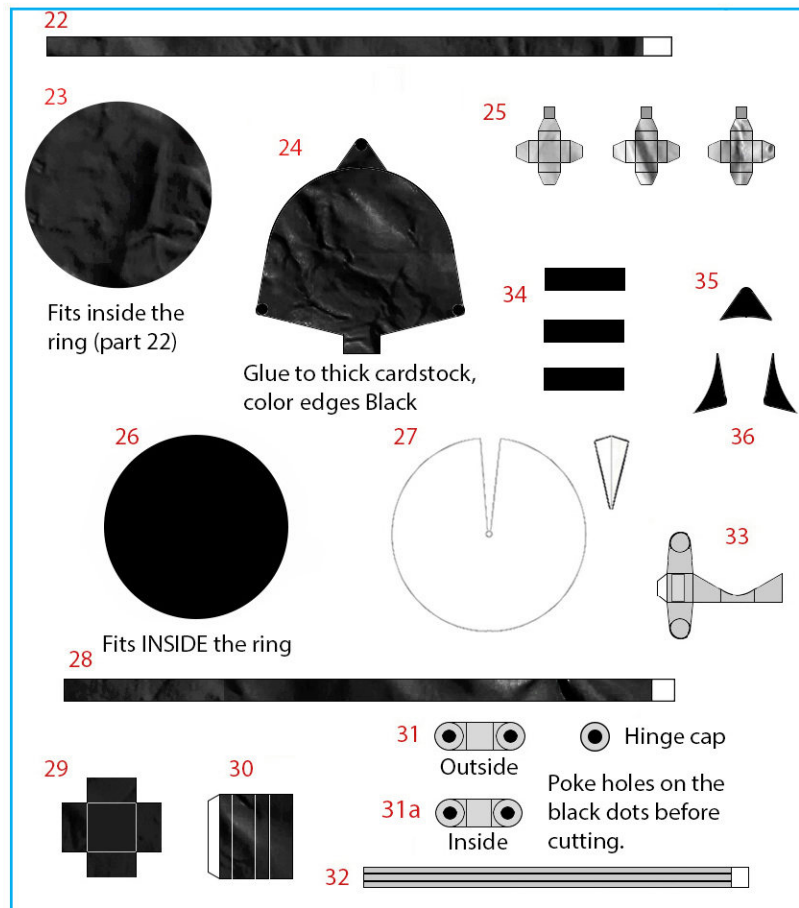
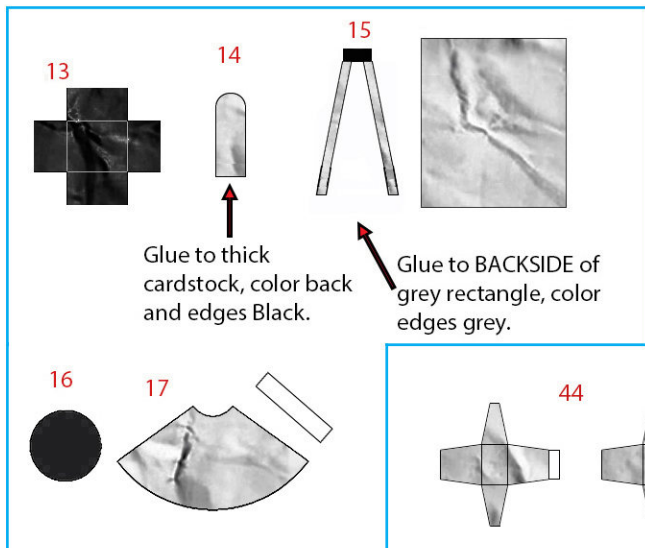
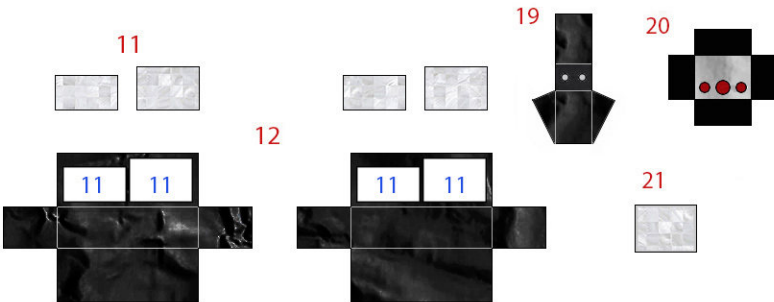
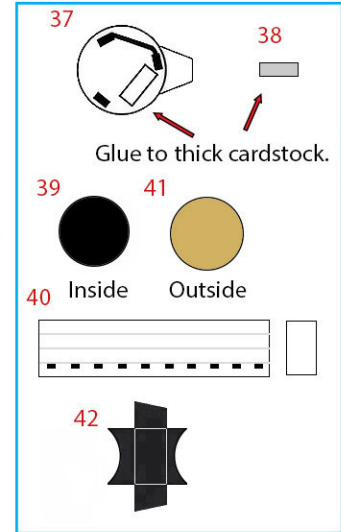
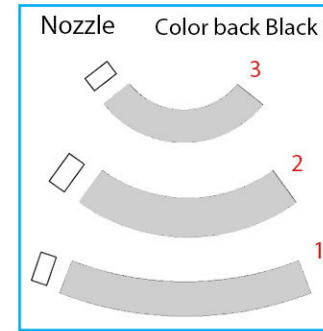
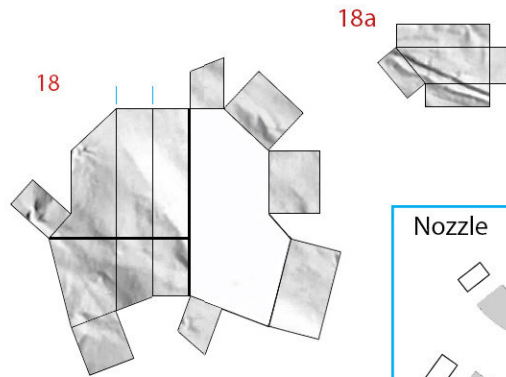
Glue to thick cardstock



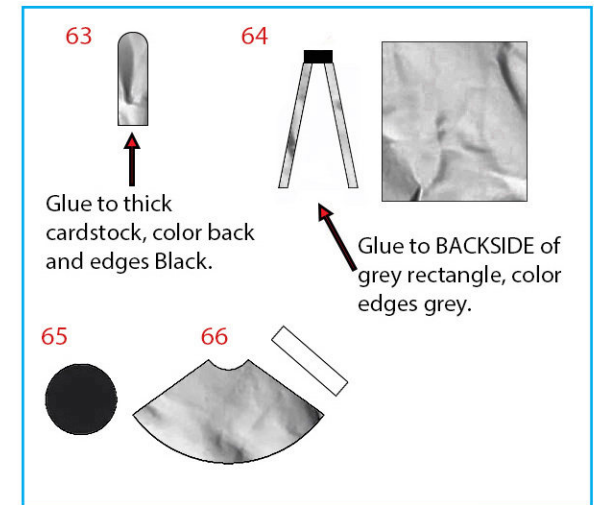
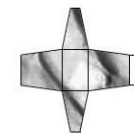
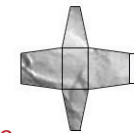
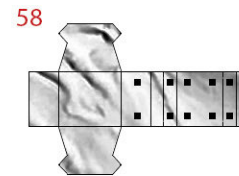
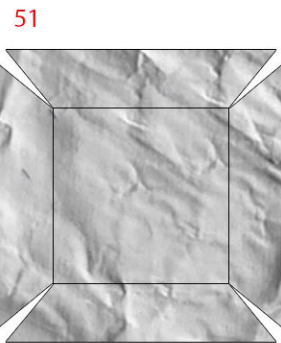
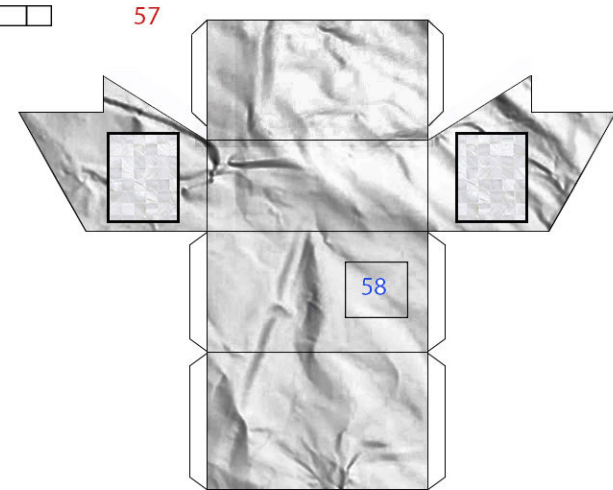
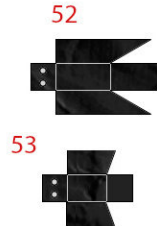
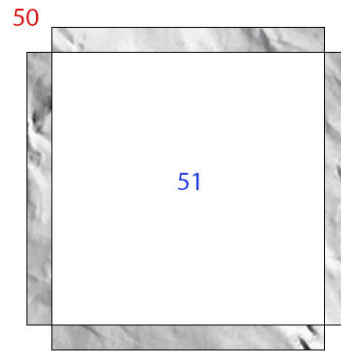
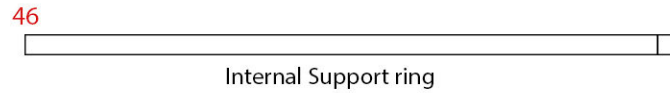
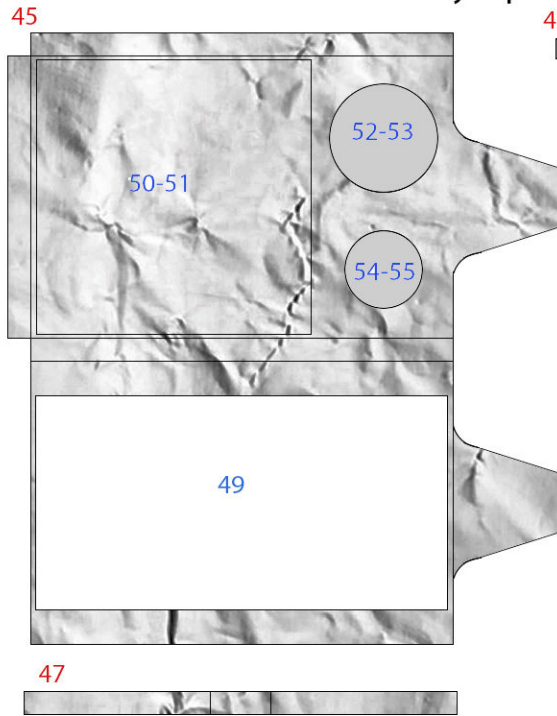
Color backside Black



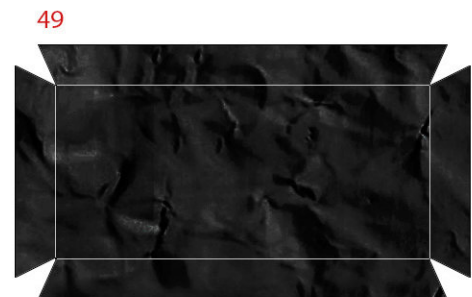
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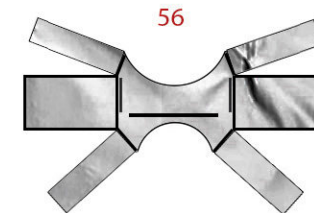
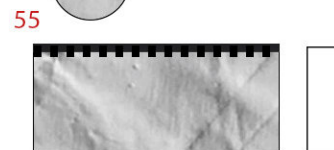
GOES-R Satellite (Geostationary Operational Environmental Satellite - R Series)



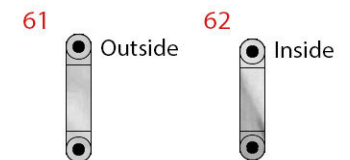
Fold-glue with color INSIDE



Fold-glue with color OUTSIDE



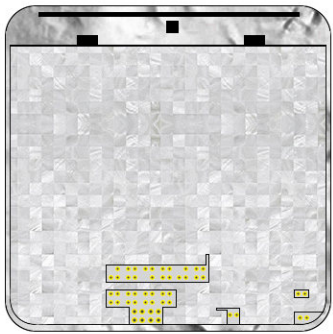
Wrap around a plastic broom straw



Poke small holes on the black dots before cutting and folding.

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67



68

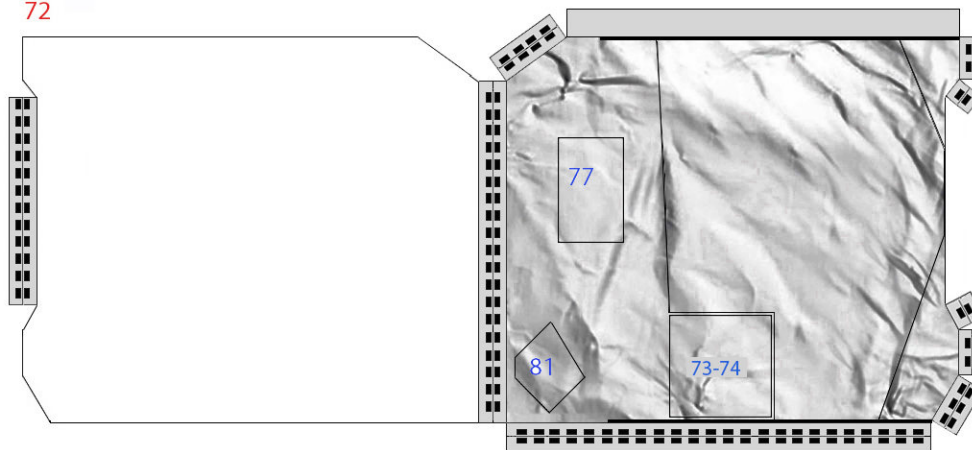


71

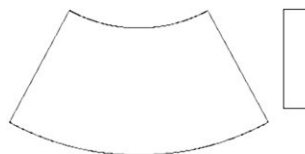


Internal Support Ring

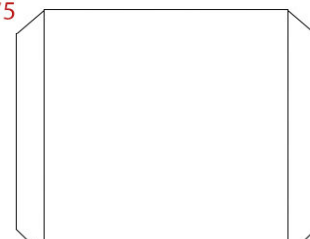
72



73



75

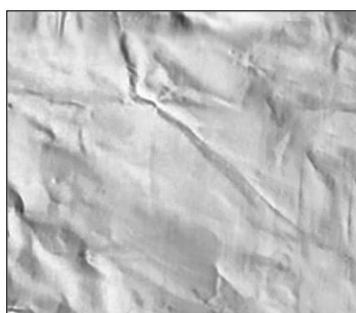
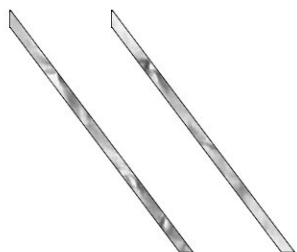


76



Glue the large rectangle to thick cardstock, glue the two squares to the other side, cut out and color the edges light grey.

69



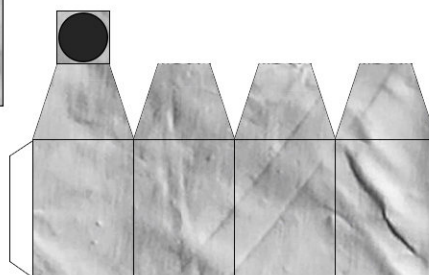
Glue these to backside of the square for graphics on both sides

70



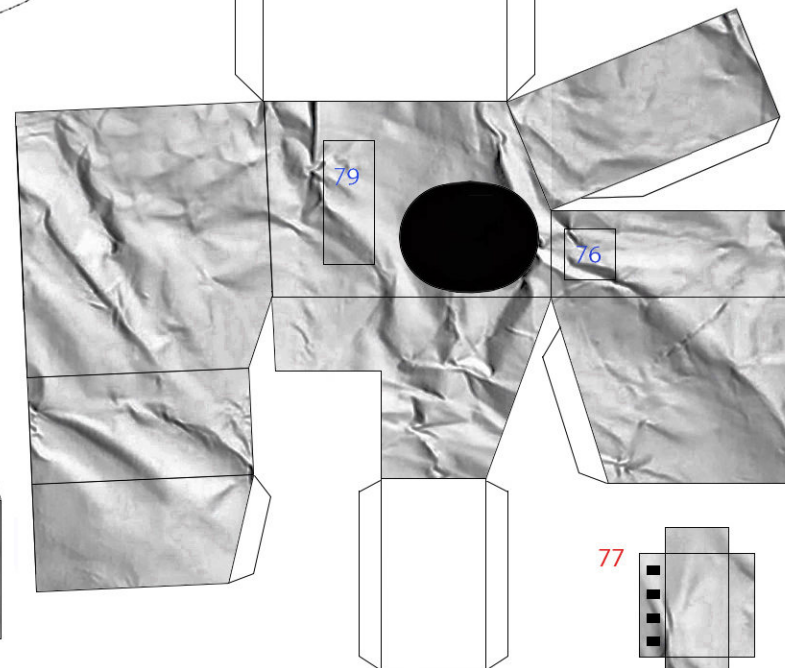
← Wrap around the top of the rod.

74

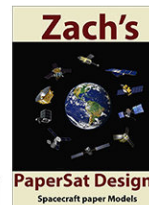
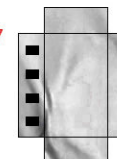


79

76



77



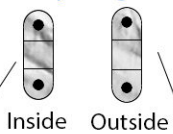
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78

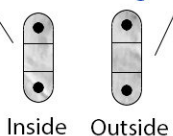


Color back Black

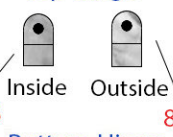
Top Hinge



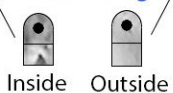
Bottom Hinge



Top Hinge

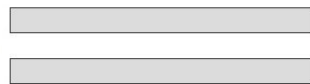


Bottom Hinge

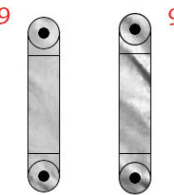


If desired, poke small holes on the black dots on parts 83-86 and 89-90.

87



89



90



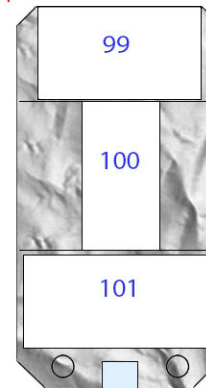
92



91

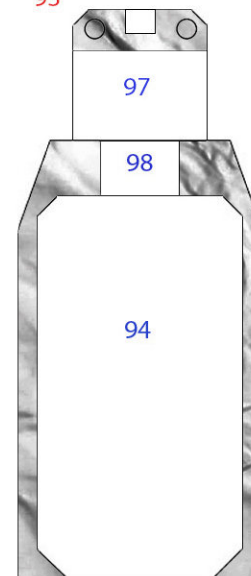


94



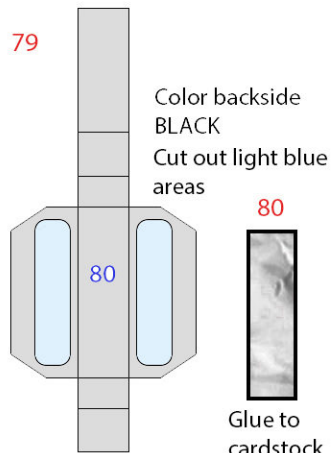
Glue to two layers of thick cardstock, color edges grey
Cut out light blue square

93



Glue this to the backside of the rectangle with the foil graphics on the next page for graphics on both sides

79

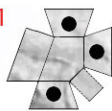


80



Glue to cardstock

81

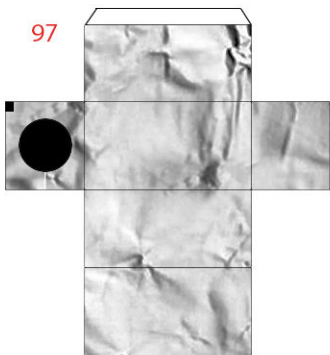


82

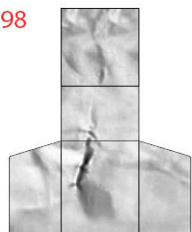


Color backside BLACK

97

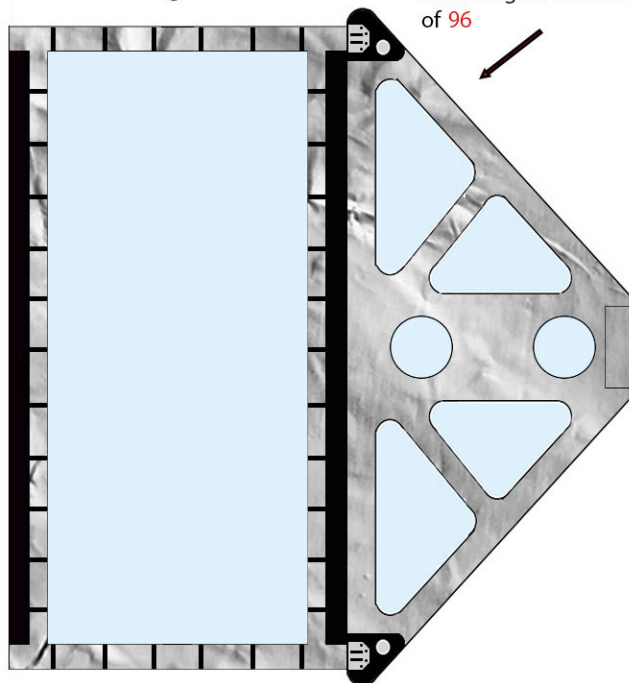


98



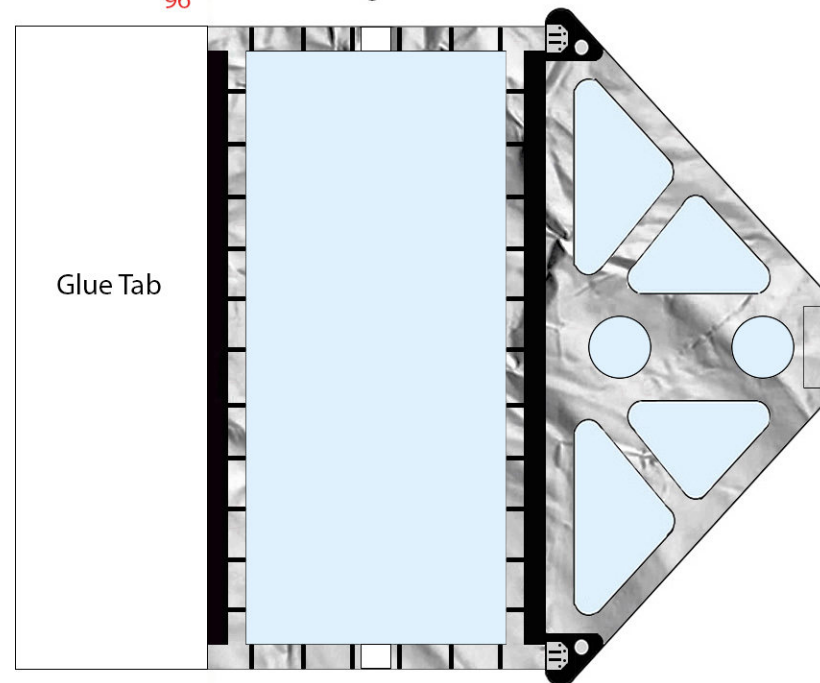
95

Cut out the light blue areas



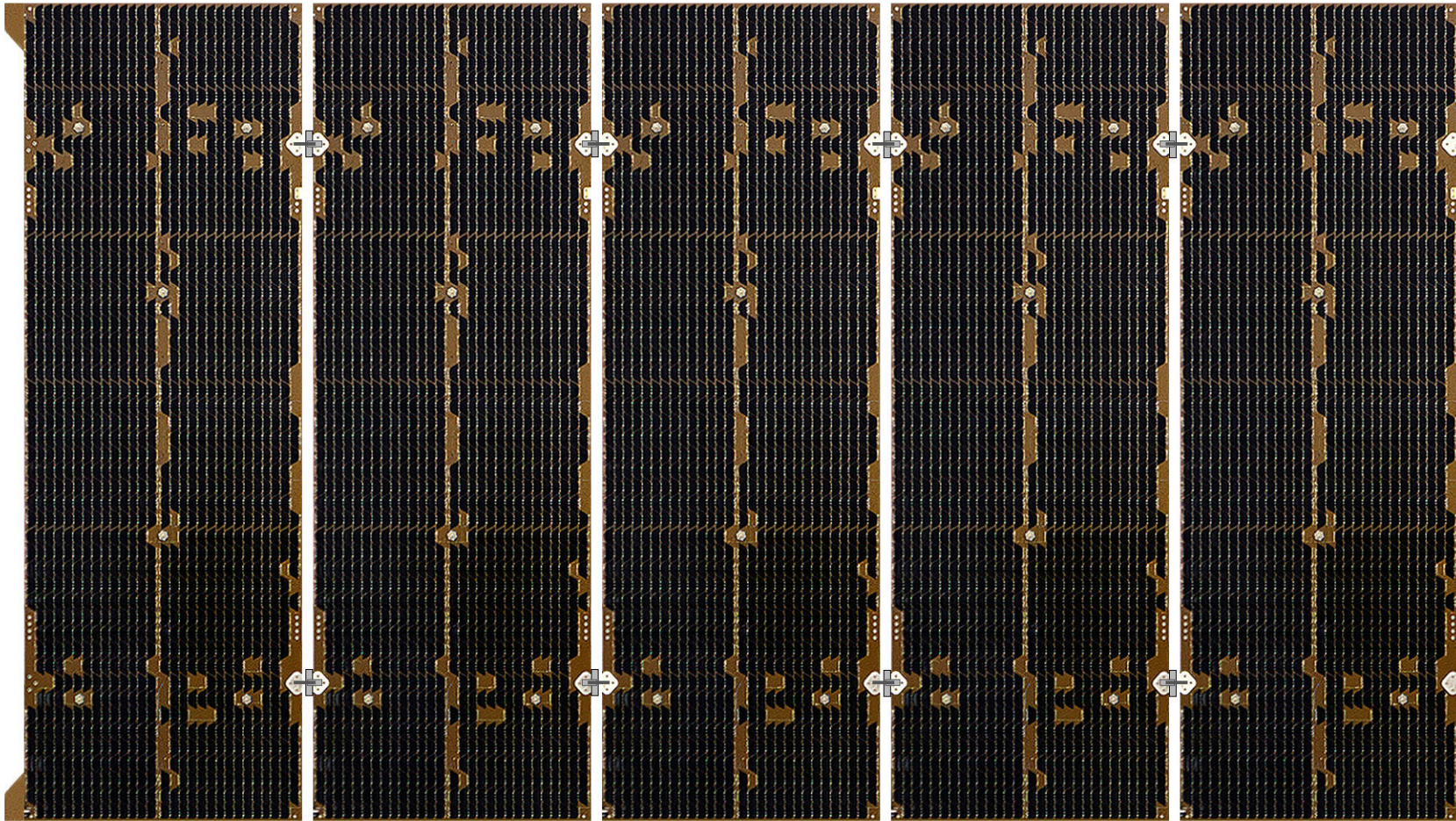
96

Cut out the light blue areas

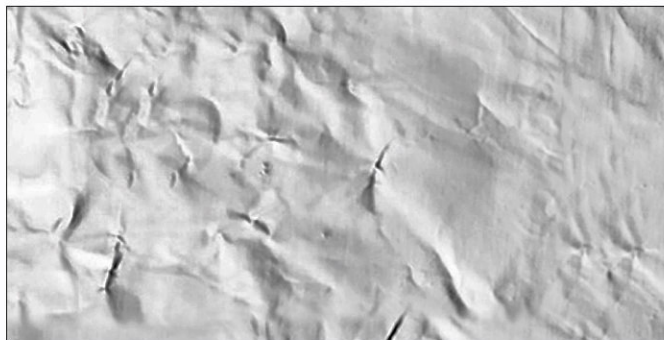


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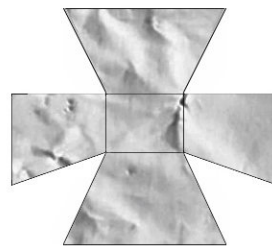
Solar Arrays - Front side



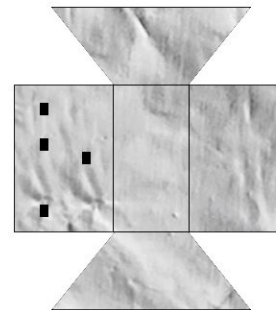
Glue part 93 to the backside of this.



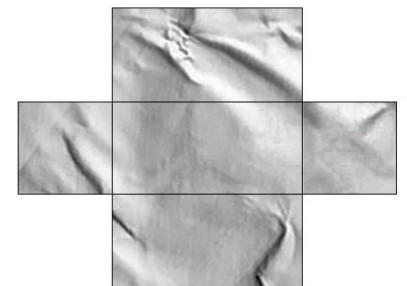
99



100

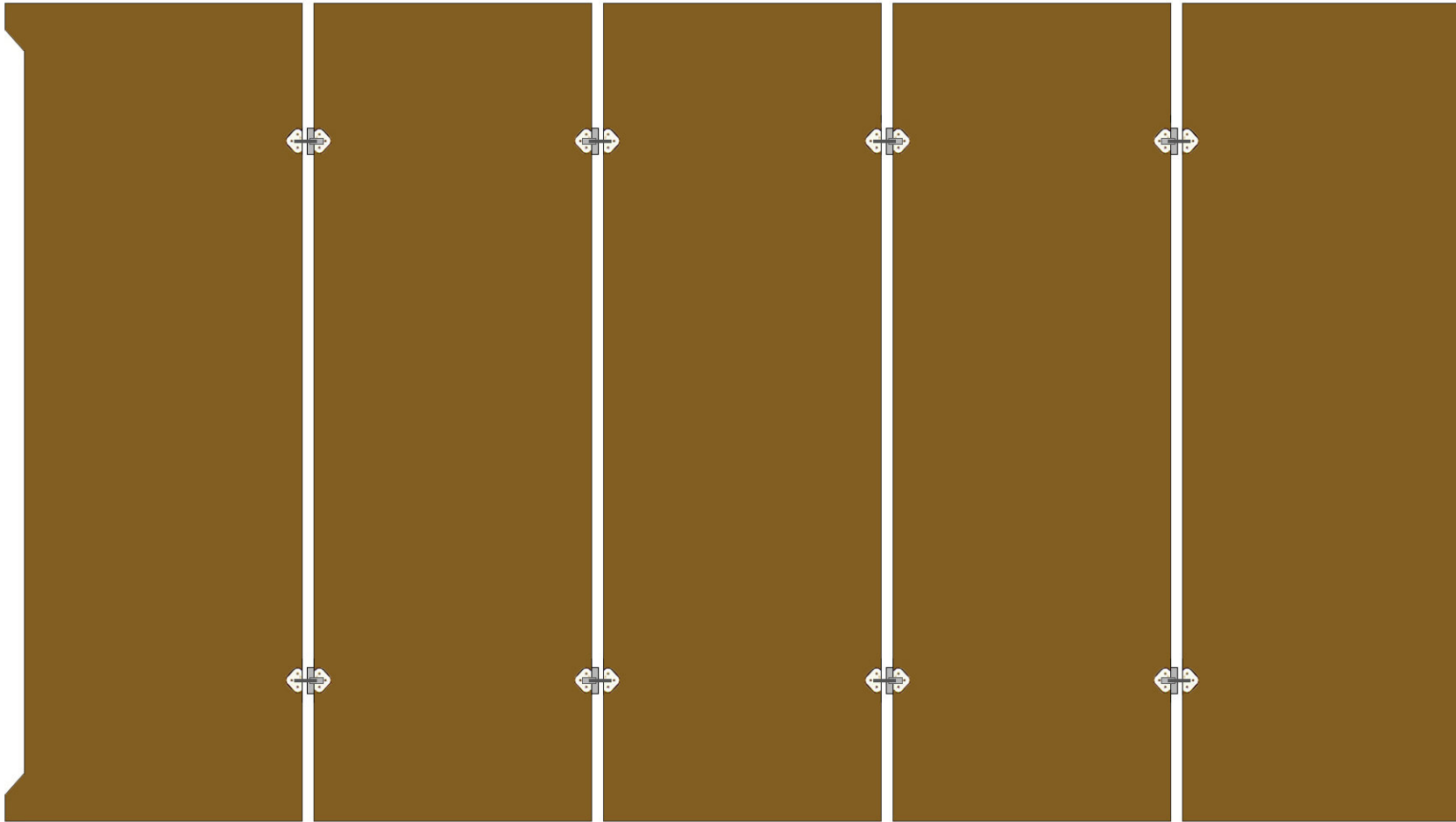


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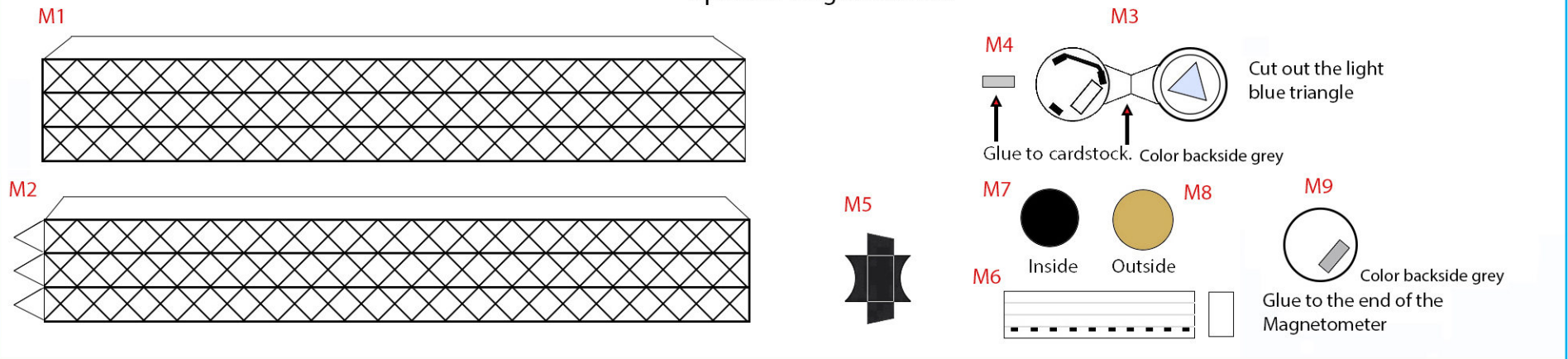


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Solar Arrays - Back side

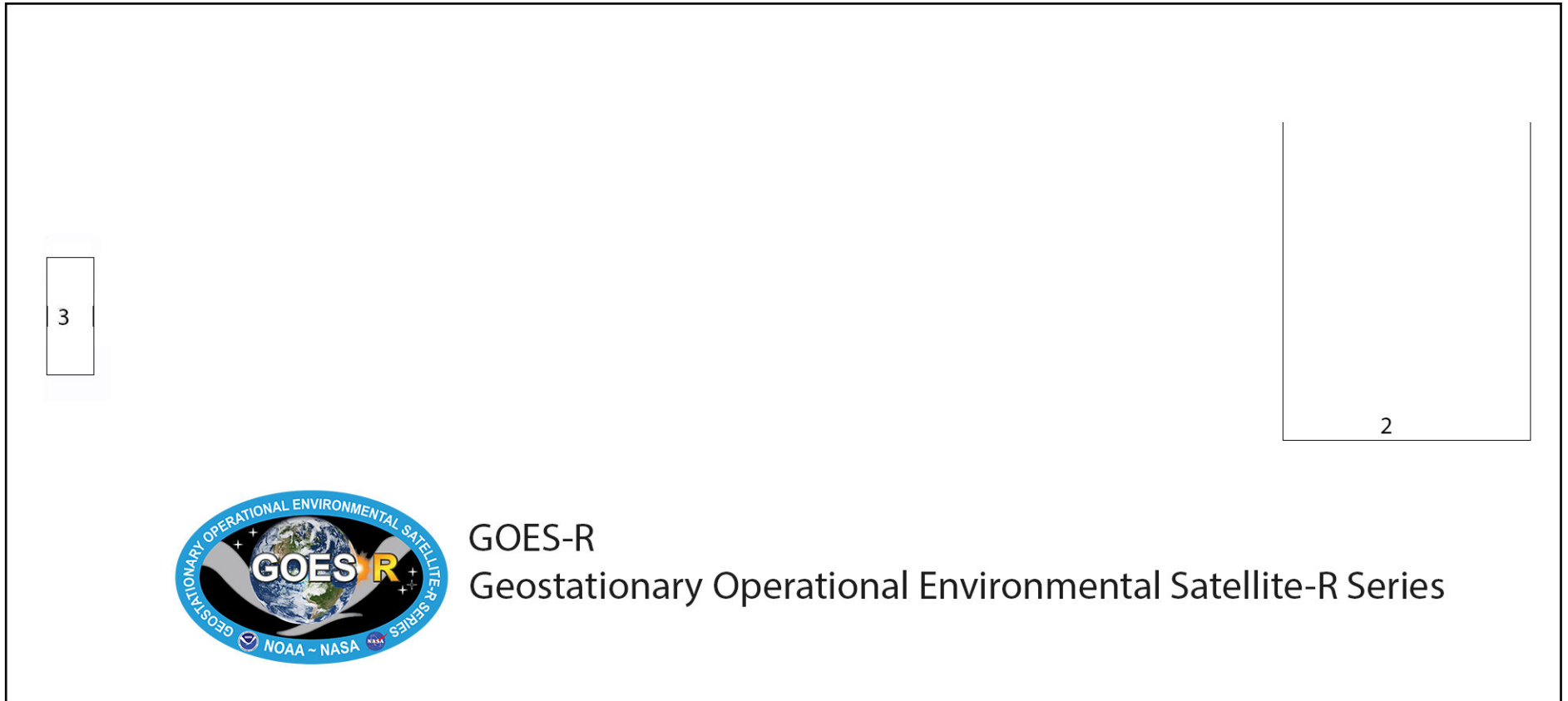


Optional Magnetometer



Print at the same scale you printed the model

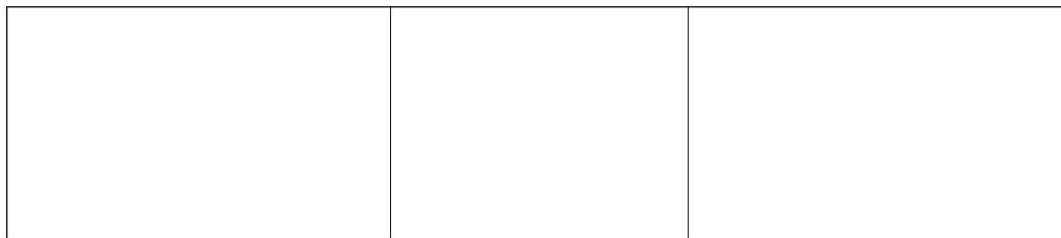
1



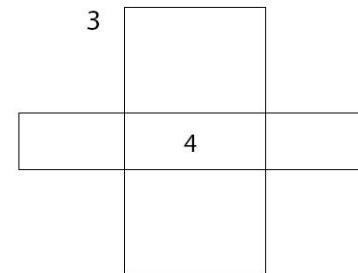
GOES-R
Geostationary Operational Environmental Satellite-R Series

Glue to two layers of thick cardstock or piece of wood

2



3



4



Fold the two end tabs UP.