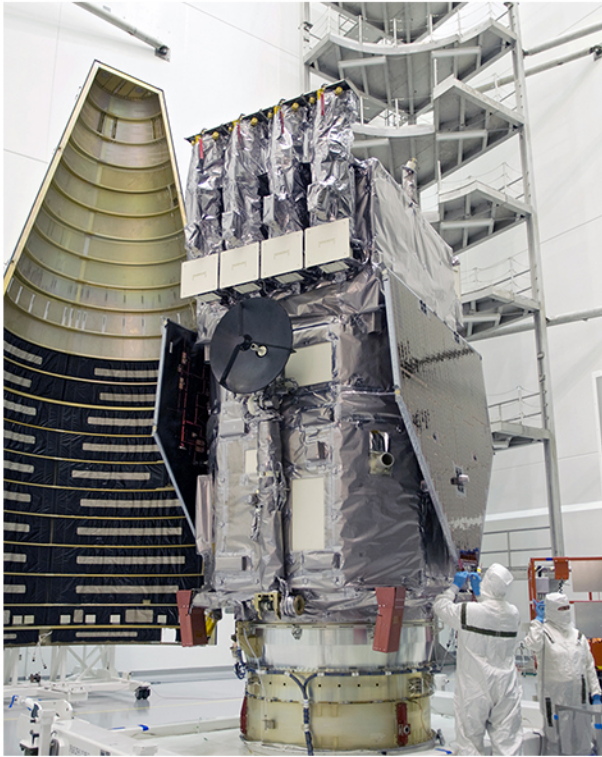


Solar Dynamics Observatory (SDO)



SDO will study how solar activity is created and how space weather results from that activity. Measurements of the Sun's interior, magnetic field, the hot plasma of the solar corona, and the irradiance will help meet the objectives of the SDO mission.

SDO will improve our understanding of the physics behind the activity displayed by the Sun's atmosphere, which drives space weather in the heliosphere, the region of the Sun's influence, and in planetary environments. SDO will determine how the Sun's magnetic field is generated, structured, and converted into violent solar events that cause space weather. SDO observations start in the interior of the Sun where the magnetic field that is the driver for space weather is created. Next, SDO will observe the solar surface to directly measure the magnetic field and the solar atmosphere to understand how magnetic energy is linked to the interior and converted to space weather causing events. Finally, SDO will measure the extreme ultraviolet irradiance of the Sun that is a key driver to the structure and composition of the Earth's upper atmosphere.

The Solar Dynamics Observatory (SDO) is designed to probe solar variability in a way that no other mission can match. High-speed cameras on SDO will take rapid-fire snapshots of solar flares and other magnetic activity. This will have the same transformative effect on solar physics that the invention of high-speed photography had on many sciences in the 19th century.

A sensor on SDO called the "Helioseismic Magnetic Imager" (HMI) can see through the Sun's surface to study what lies beneath. It is like taking an ultrasound picture of a baby still inside her mother.

SDO's goal is to understand, driving towards a predictive capability, the solar variations that influence life on Earth and humanity's technological systems by determining

- ☒ how the Sun's magnetic field is generated and structured
- ☒ how this stored magnetic energy is converted and released into the heliosphere and geospace in the form of solar wind, energetic particles, and variations in the solar irradiance.

SDO launched on February 11, 2010, 10:23 am EST on an Atlas V from SLC 41 from Cape Canaveral.

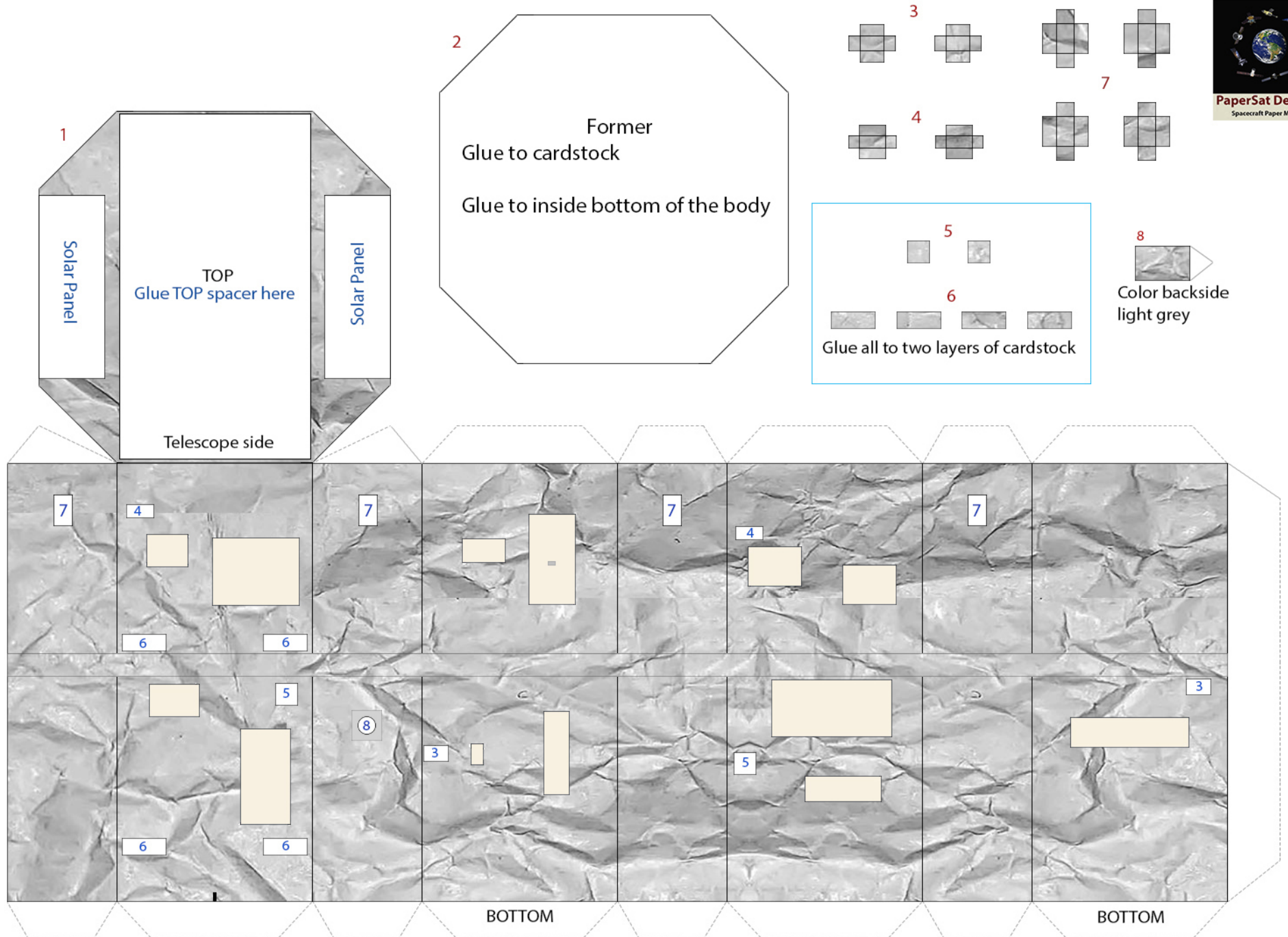
Controllers were astounded at what SDO produced in its first year of observations, particularly its views of the sun's corona. Normally that portion of the sun is best visible during eclipses, but with SDO, scientists were able to watch what the corona was doing from its tip to the sun's surface.

SDO has been on station for over nine years, observing the Sun almost 24 hours a day each day. Over 350 million images are in the SDO data archives and 3000 research papers have appeared describing the science of SDO.

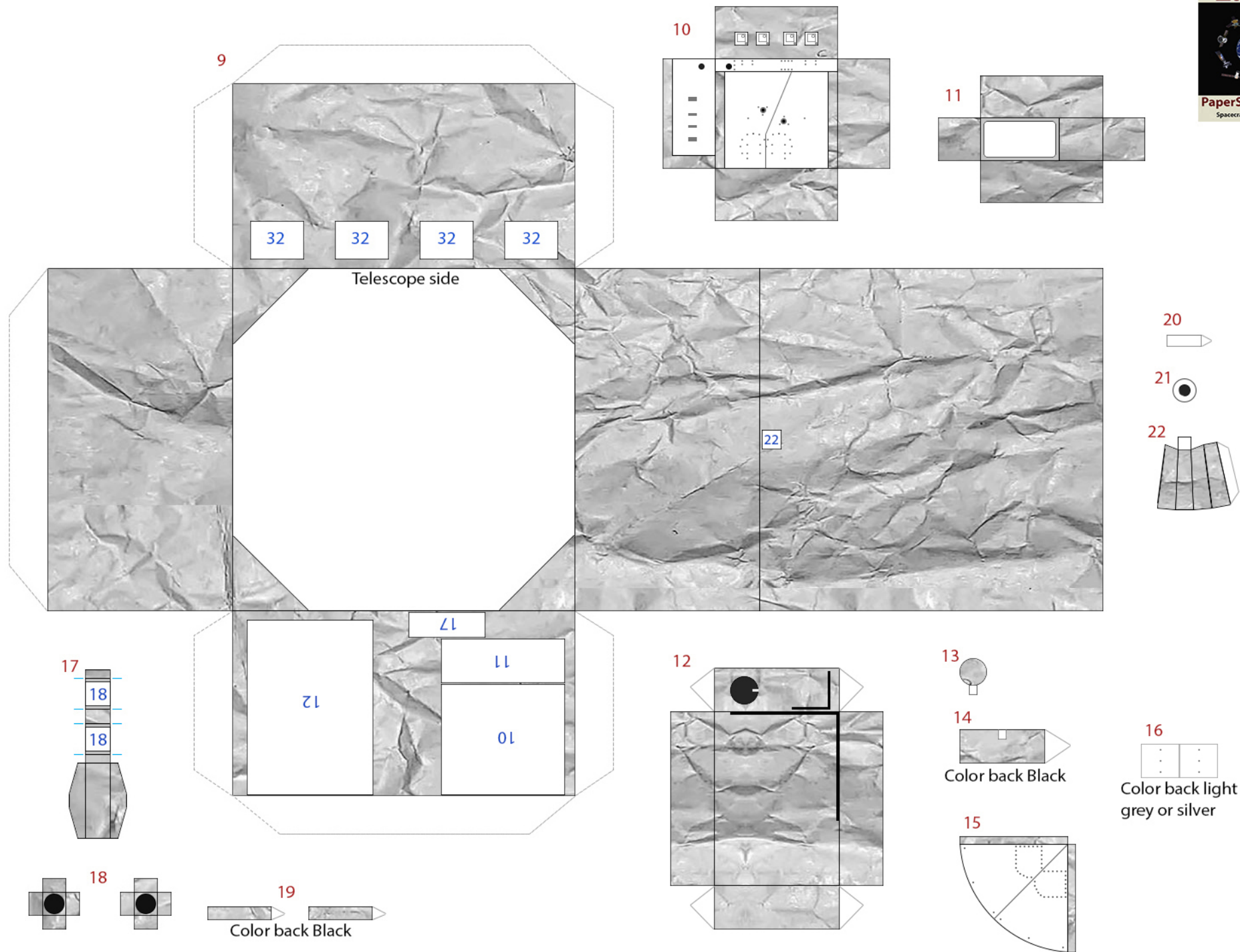
On October 1, 2017 Began Second Extended Mission.



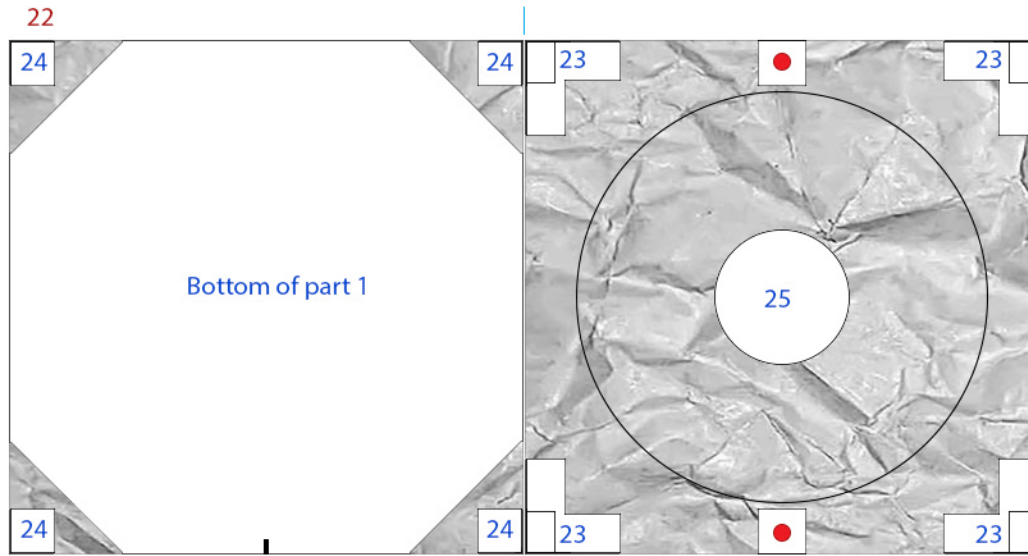
Solar Dynamics Observatory (SDO)



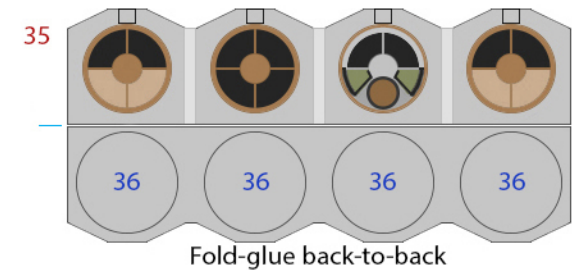
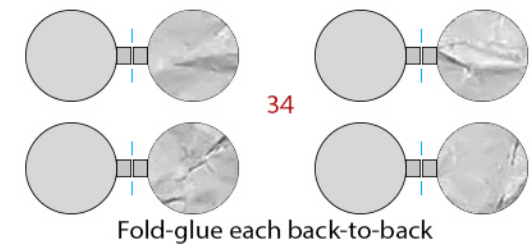
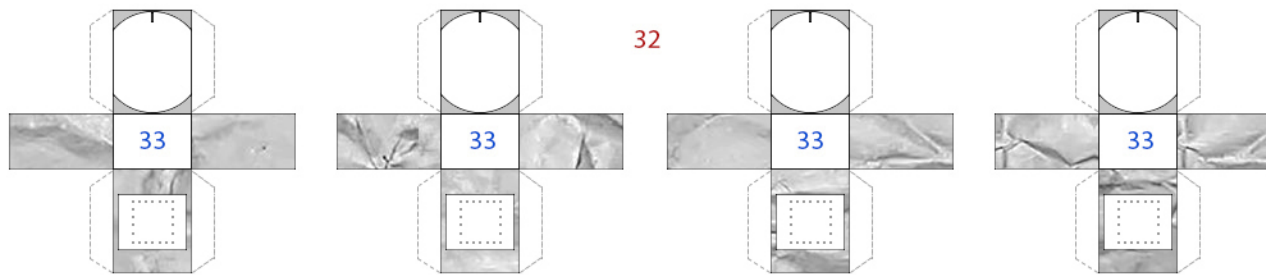
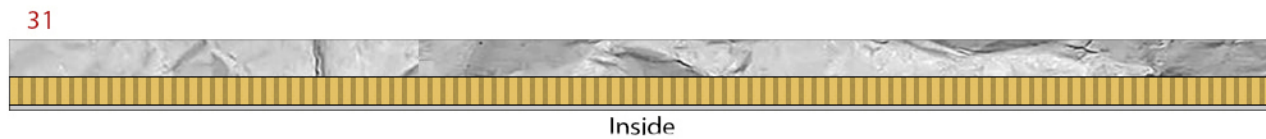
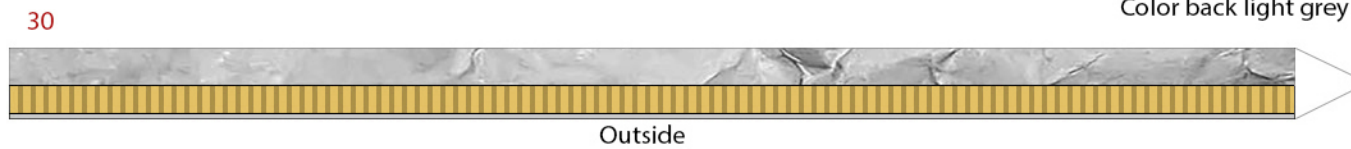
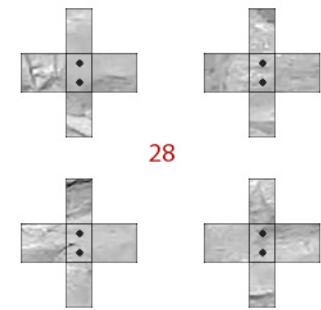
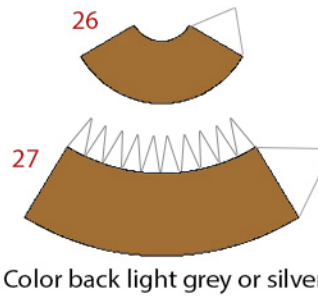
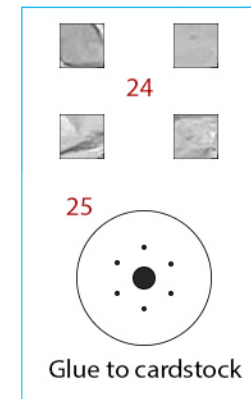
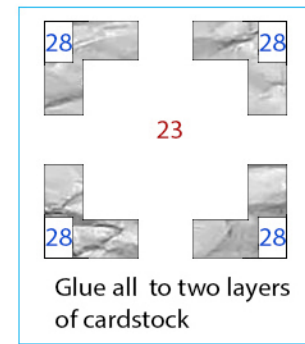
Solar Dynamics Observatory (SDO)



Solar Dynamics Observatory (SDO)



Fold-glue back-to-back



Fold-glue all these back-to-back

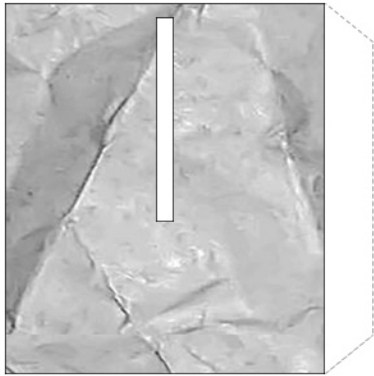
Solar Dynamics Observatory (SDO)

36

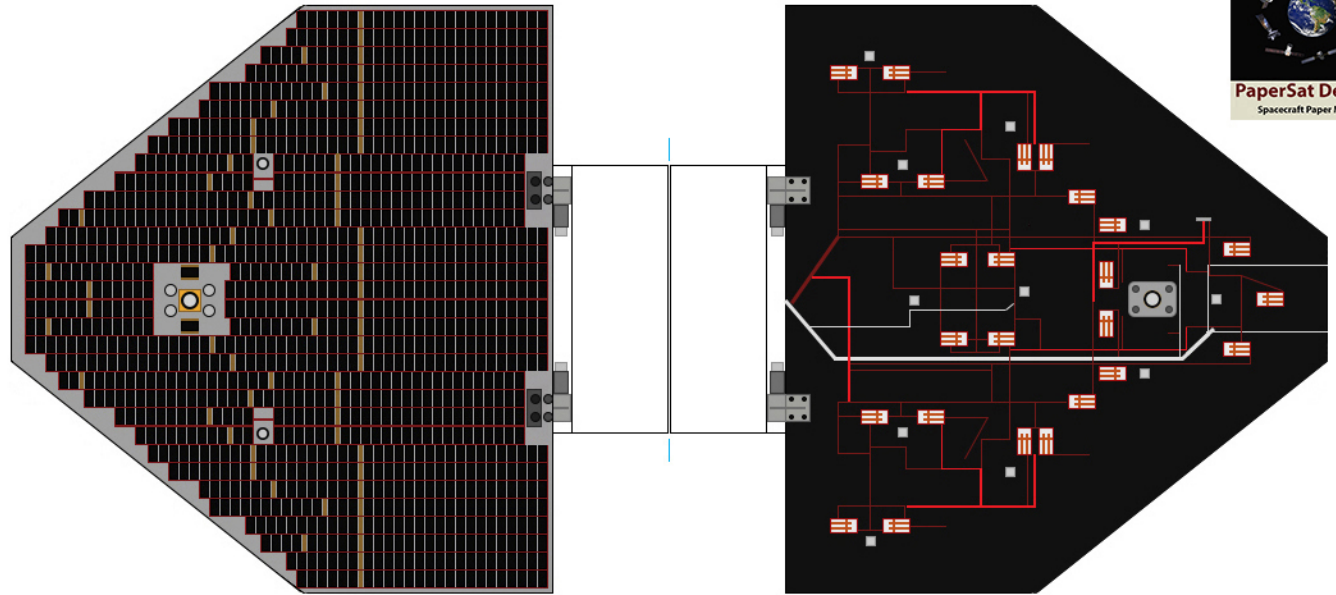
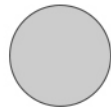
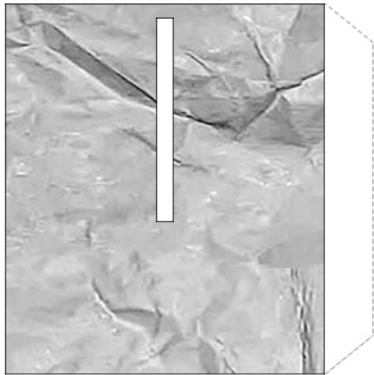
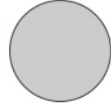
Zach's



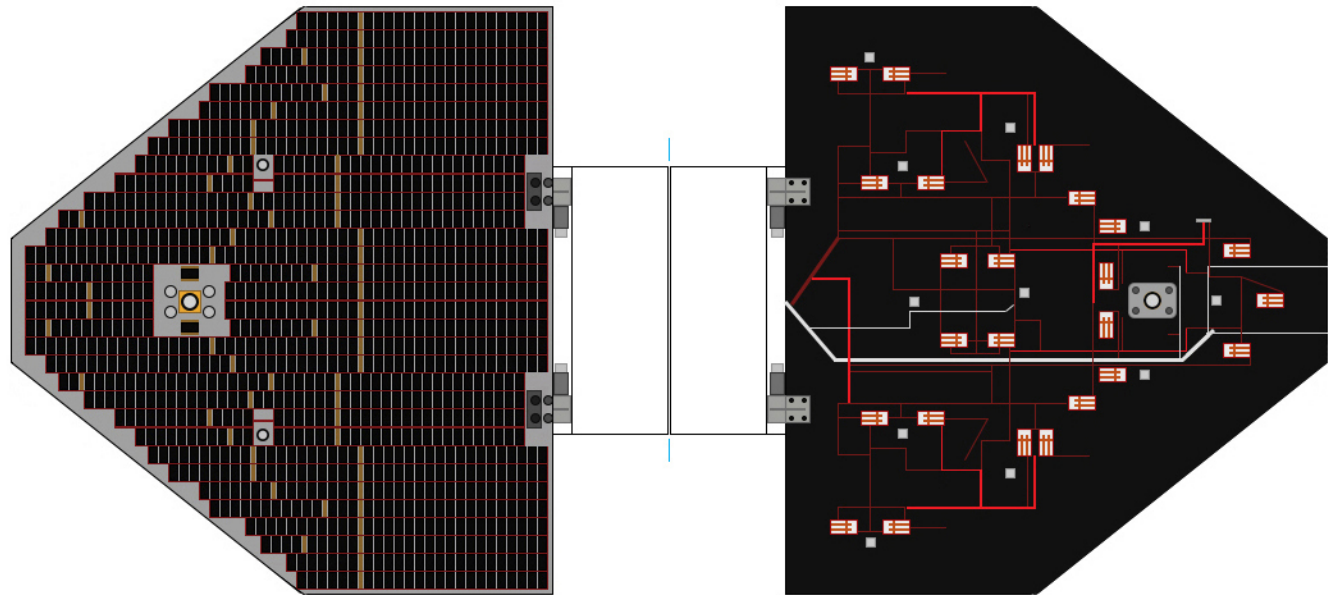
PaperSat Designs
Spacecraft Paper Models



36a



Fold-glue both solar panels back-to-back

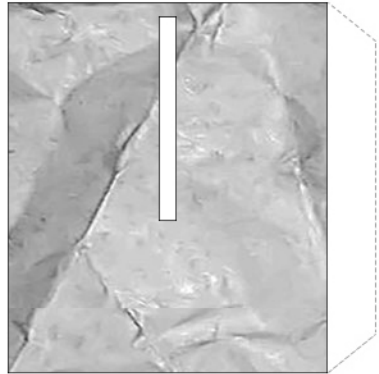


TOP spacer

Glue to cardstock

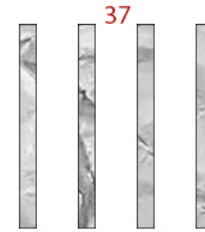
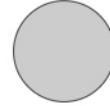
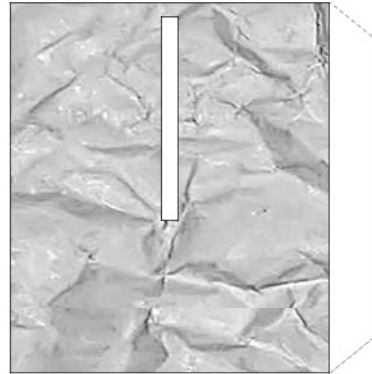
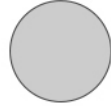
Telescope side

Solar Dynamics Observatory (SDO)



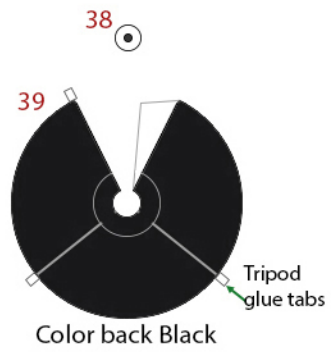
36

36a



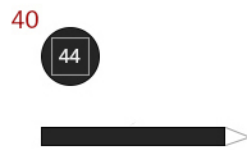
37

Glue to cardstock



38

Color back Black



40



41

Color back Black



42



43

Glue to cardstock,
color back Black



44

45a



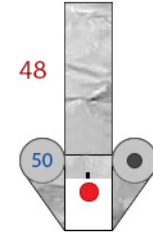
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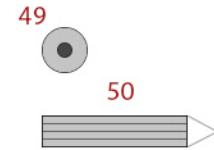
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47

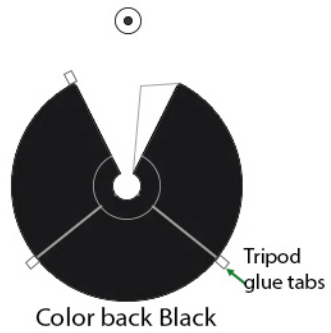


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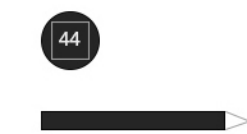


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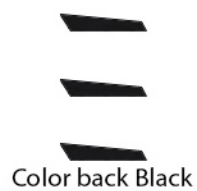
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Color back Black



40



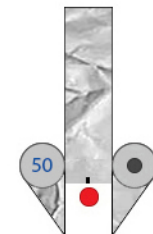
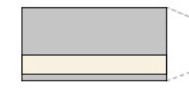
Color back Black



Glue to cardstock,
color back Black



44



48

