



OSIRIS-REx - (Origins, Spectral Interpretation, Resource Identification, Security - Regolith Explorer) asteroid sample return mission.

The first U.S. mission to collect a sample of an asteroid and return it to Earth for study. Analyzing the sample will help scientists understand the early solar system, as well as the hazards and resources of near-Earth space.

Asteroids are remnants of the building blocks that formed the planets and enabled life. Those like Bennu contain natural resources such as water, organics and metals. Future space exploration and economic development may rely on asteroids for these materials.

OSIRIS-REx was launched from Cape Canaveral, Florida, on an Atlas V 411 rocket on Sept. 8, 2016. OSIRIS-REx will orbit the sun for a year, then use Earth's gravitational field to assist it on its way to Bennu. In August 2018, OSIRIS-REx's approach to Bennu will begin. It will use an array of small rocket thrusters to match the velocity of Bennu and rendezvous with the asteroid.

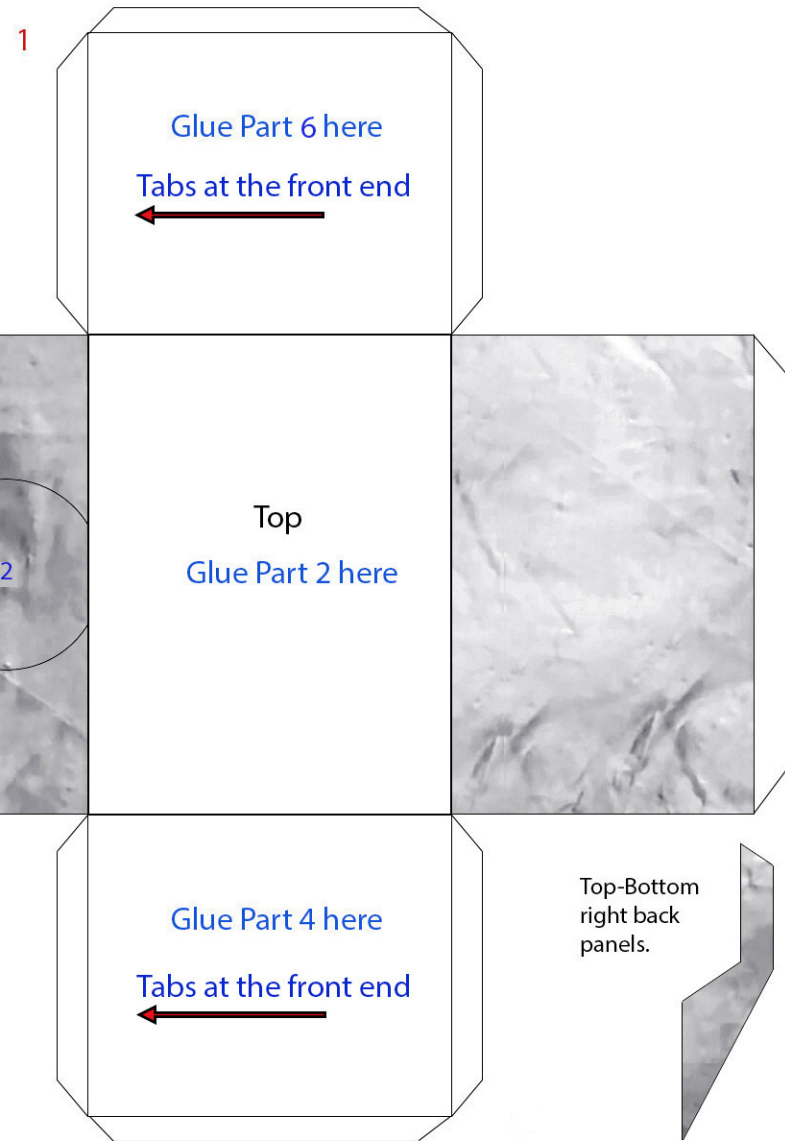
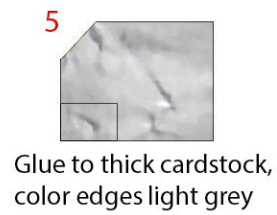
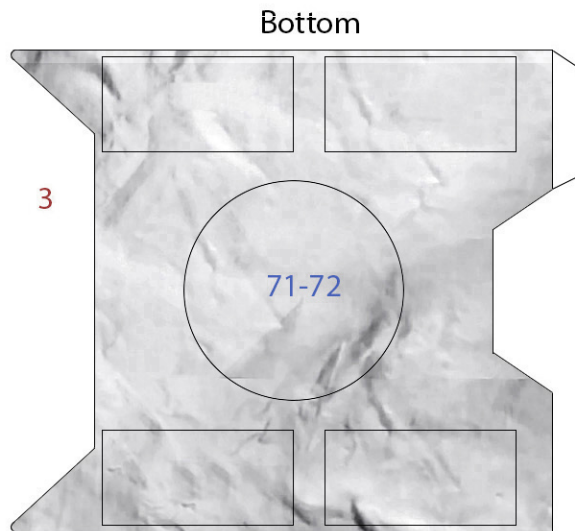
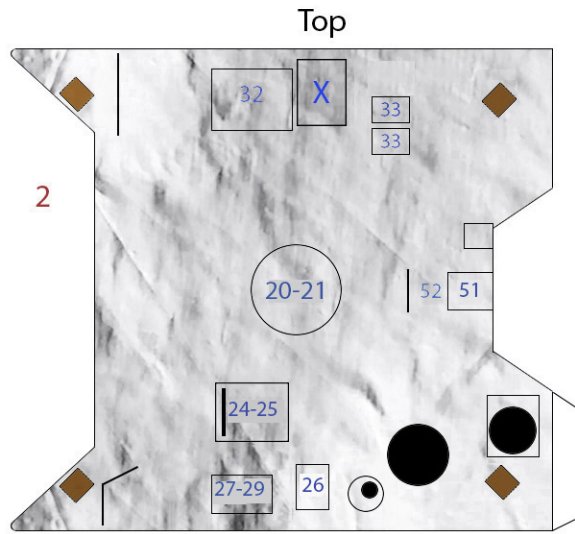
The spacecraft will begin a detailed survey of Bennu two months after slowing to encounter Bennu. The process will last over a year, and, as part of it, OSIRIS-REx will map potential sample sites. After the selection of the final site, the spacecraft will briefly touch the surface of Bennu to retrieve a sample. The sampling arm will make contact with the surface of Bennu for about five seconds, during which it will release a burst of nitrogen gas.

The procedure will cause rocks and surface soil to be stirred up and captured in the sampler head. The spacecraft has enough nitrogen to allow three sampling attempts, to collect between 60 and 2000 grams 2–70 ounces (60–2000) grams.

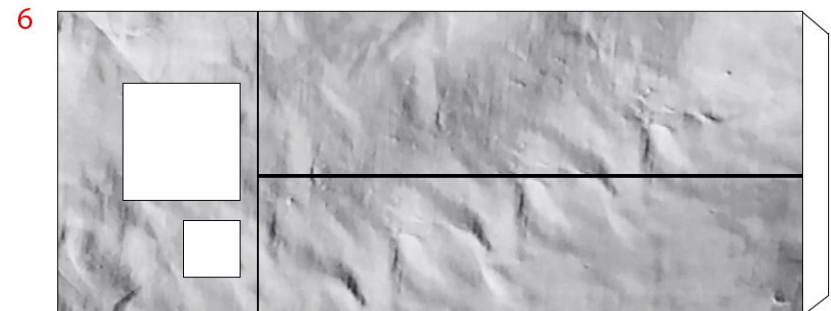
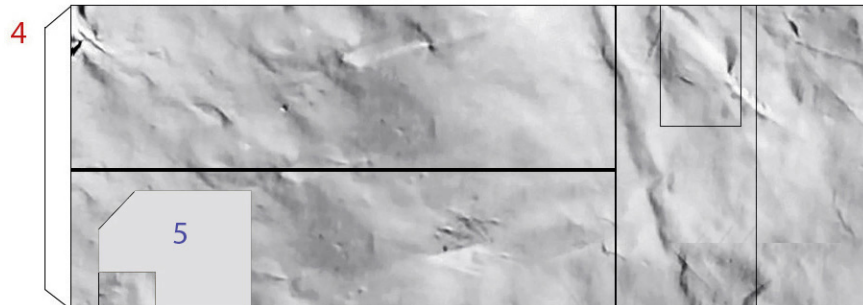
Spacecraft specifications:

- Length: 20.25 feet (6.2 meters) with solar arrays deployed
- Width: 8 feet (2.43 meters) x 8 feet (2.43 meters)
- Height: 10.33 feet (3.15 meters)
- TAGSAM Length: 11 feet (3.35 meters)
- Dry Mass (unfueled): 1,940 pounds (880 kilograms)
- Wet Mass (fueled): 4,650 pounds (2,110 kilograms)
- Power: Two solar panels generate between 1,226 watts and 3,000 watts, depending on the spacecraft's distance from the sun.

OSIRIS-REx

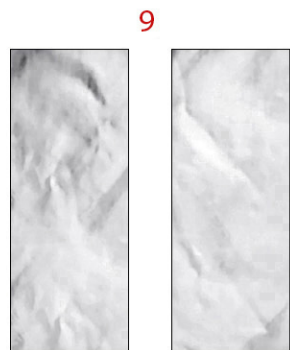
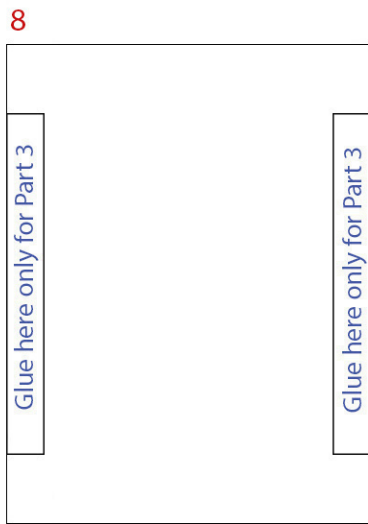


Top-Bottom
 right back
 panels.

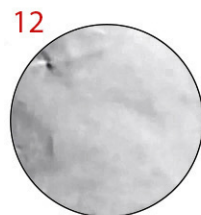


Side Panels

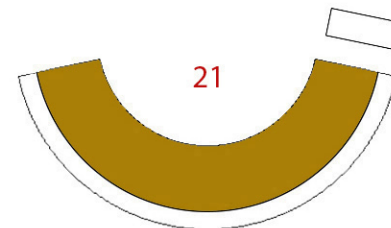
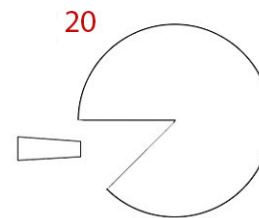
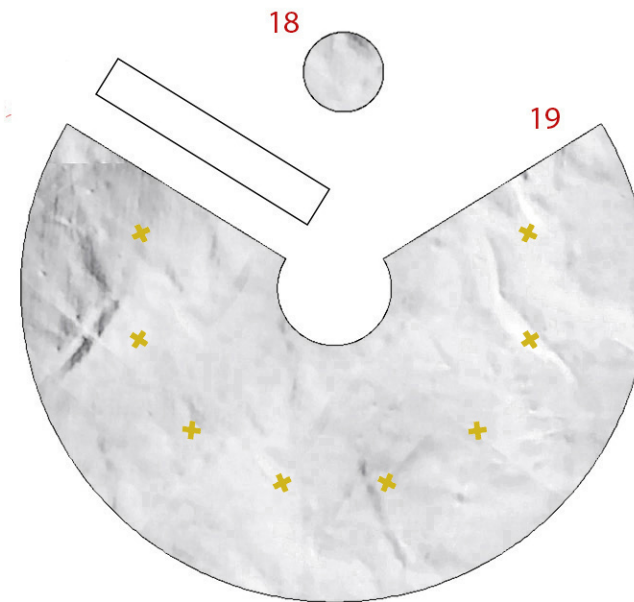
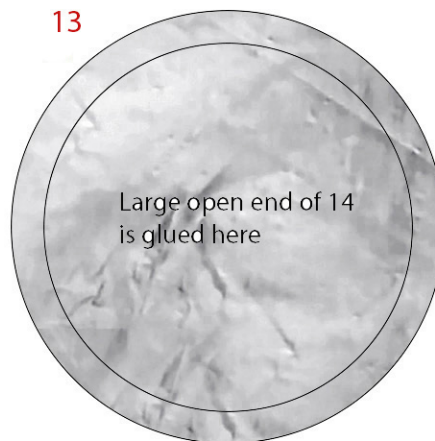
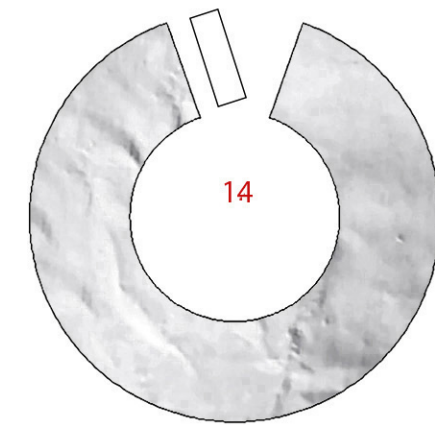
OSIRIS-REx



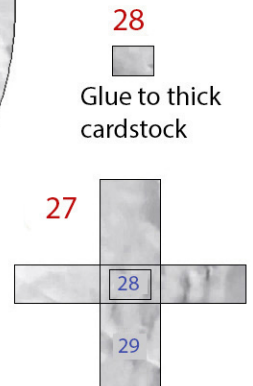
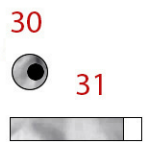
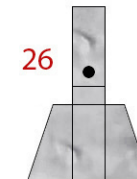
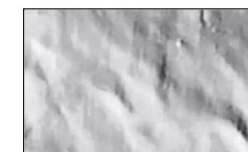
Fit INSIDE 11
Glue to cardstock



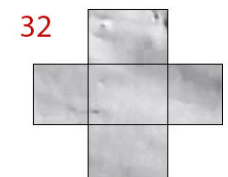
Glues OUTSIDE 11



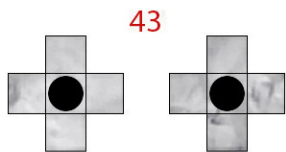
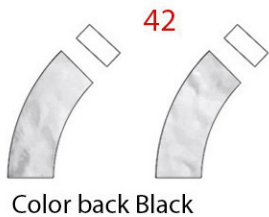
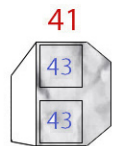
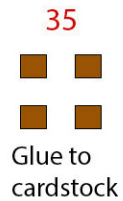
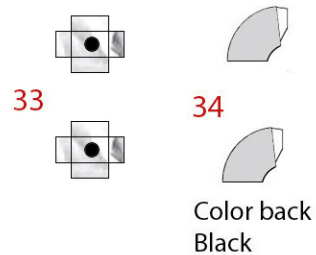
Glue to backside of rectangle for
graphics on both sides.



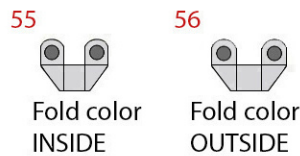
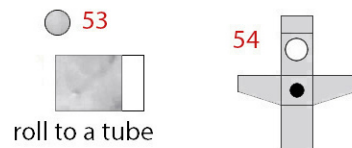
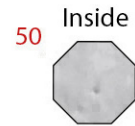
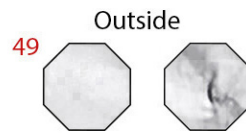
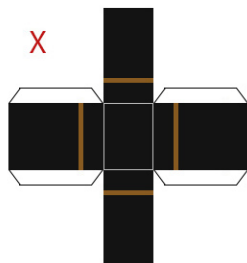
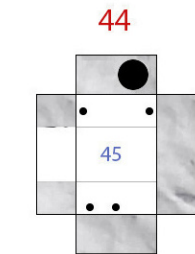
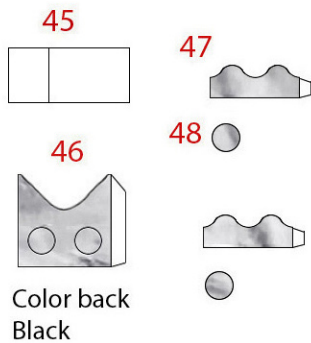
Glue to backside of the square
for color on both sides.



OSIRIS-REx



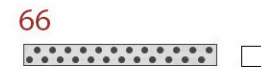
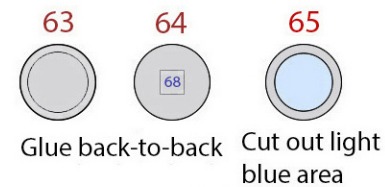
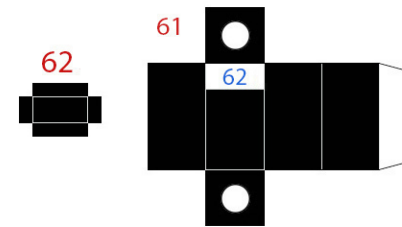
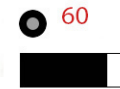
NOTE
Parts 36-40 has been deleted from the model.



Glue to thick cardstock, color backside and edges Black.



Glue to thick cardstock



Fold color INSIDE



Fold color OUTSIDE

You will need Toothpicks cut at:
38mm long

6mm long - for realistic look, use a square match stick.

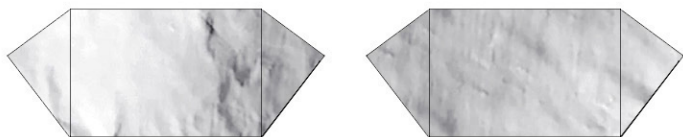
12mm long - for realistic look, use a square match stick.

Lightly sand each of the 4 sides of the match sticks for proper size.

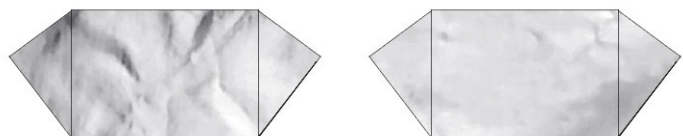
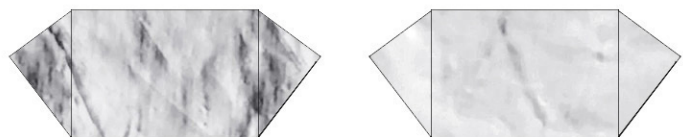
Color all these light grey.

OSIRIS-REx

69 Outside



70 Inside



Fold 69 with color outside, fold 70 with color inside.
70 fits inside 69 for color inside and outside.
The long end of the angled sides are glued under the spacecraft.

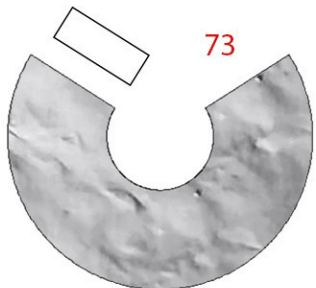
71

Outside



72

Inside - roll with color inside



74



76



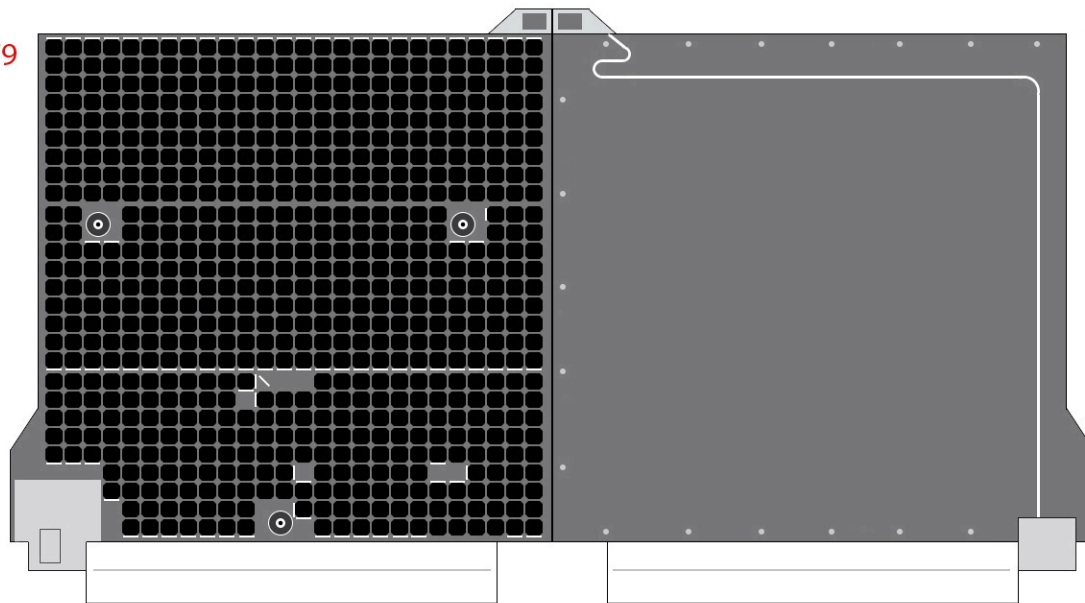
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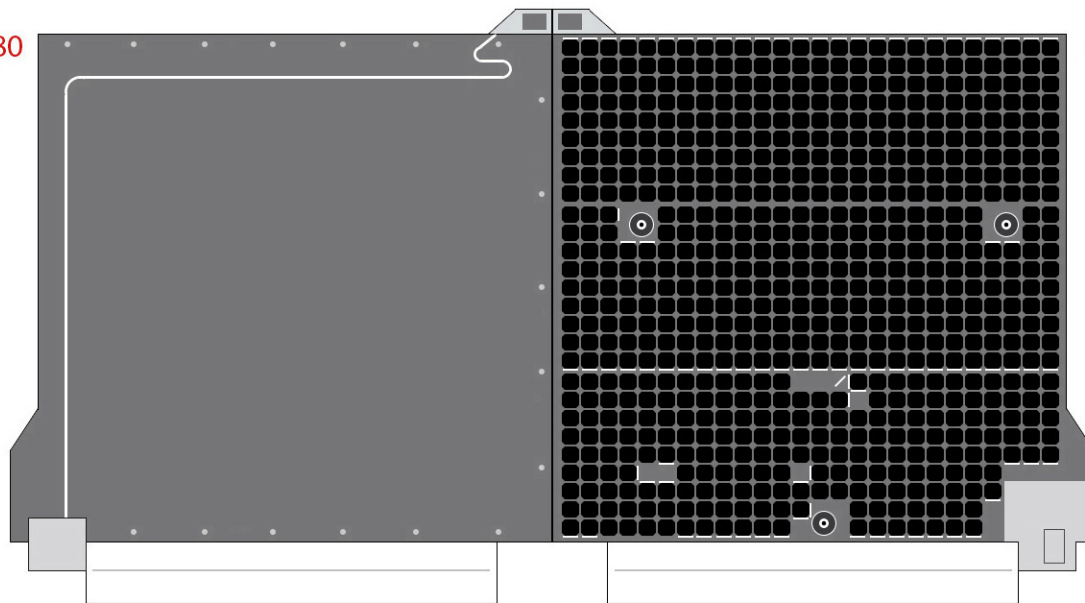
Spare

Color back Black

79



80



77



Glue two layers of thick cardstock