

Black Brant XI Sounding Rocket



The Black Brant XI rocket system was a three stage system used primarily to carry heavy payloads to high altitudes. Its development was a spin-off of the Black Brant XII development.

The first and second stages were the Mk 11 Mod 5 Talos rocket motor and the Taurus motor. The third stage was a modified Black Brant VC motor. The Black Brant nozzle was extended for exoatmospheric use and the tail cone was changed to enclose the nozzle. The aft end of the tail cone had a restraining device to keep the Taurus and Black Brant connected during second stage coasting. This motor configuration made up the first three stages of the Black Brant XII.

The standard payload configuration for the Black Brant XI vehicle was 0.44 cm (17.26 inches) in diameter with a 3:1 ogive nose shape.

Payload length and weight limits for the Black Brant XI are not defined as they are for the Black Brant V and specific limitations for this system will be determined as the situation warrants. For payload weights of 700 pounds, apogee altitudes of 500 km can be expected. A payload of 1200 pounds will reach 350 km. Both values use a launcher elevation angle of 85 degrees from a sea level launch location.

Status: Active.

First Launch: 1990-02-01

Last Launch: 2012-07-23

Number: 8

Gross mass: 5,300 kg (11,600 lb)

Height: 17.00 m (55.00 ft)

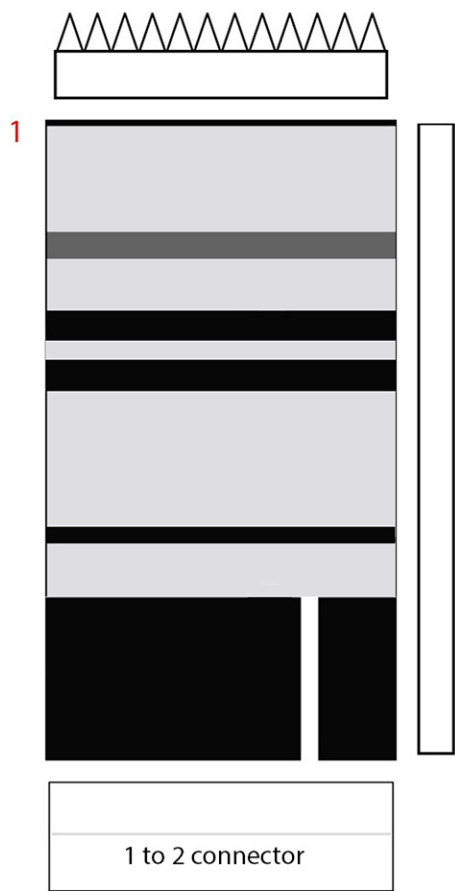
Diameter: 0.76 m (2.49 ft)

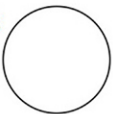
Apogee: 1,400 km (800 mi)

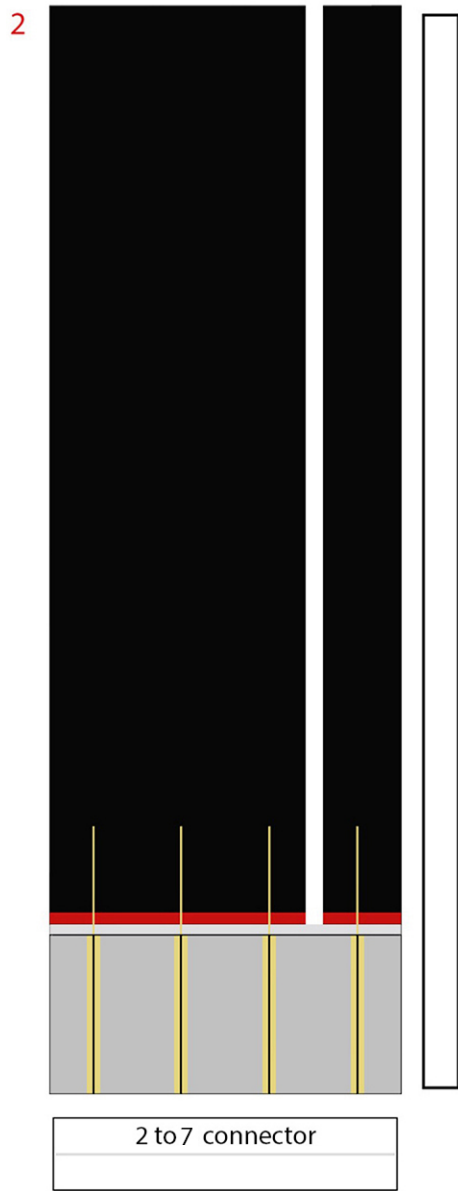


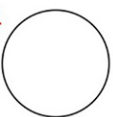
2016

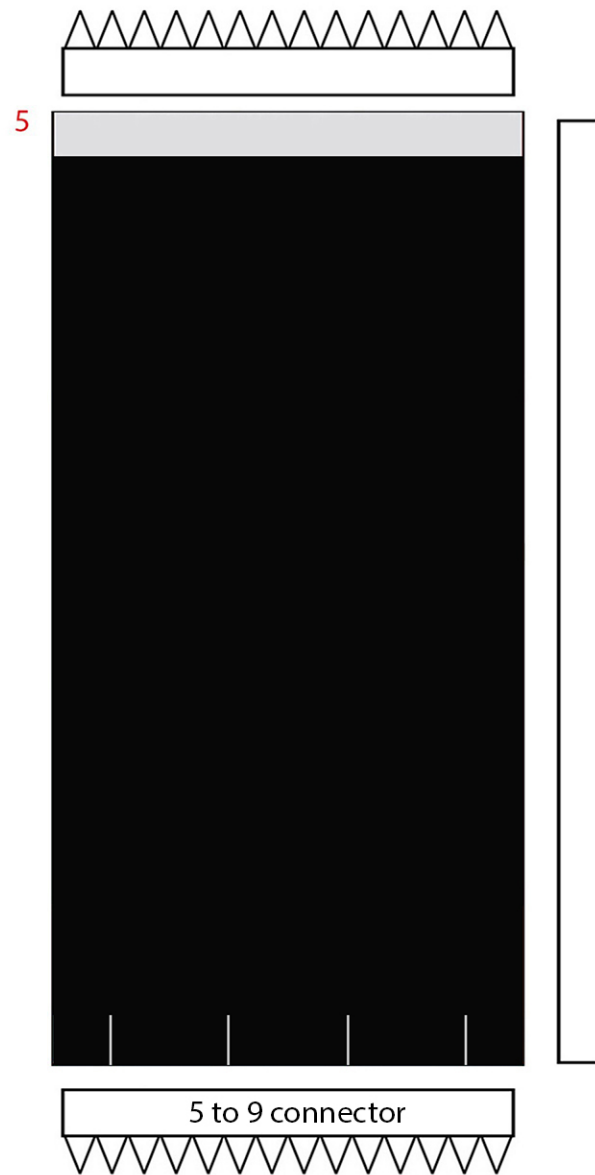
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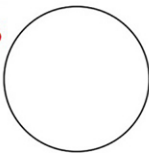


3  Glue to cardstock for strength



4  Glue to cardstock for strength



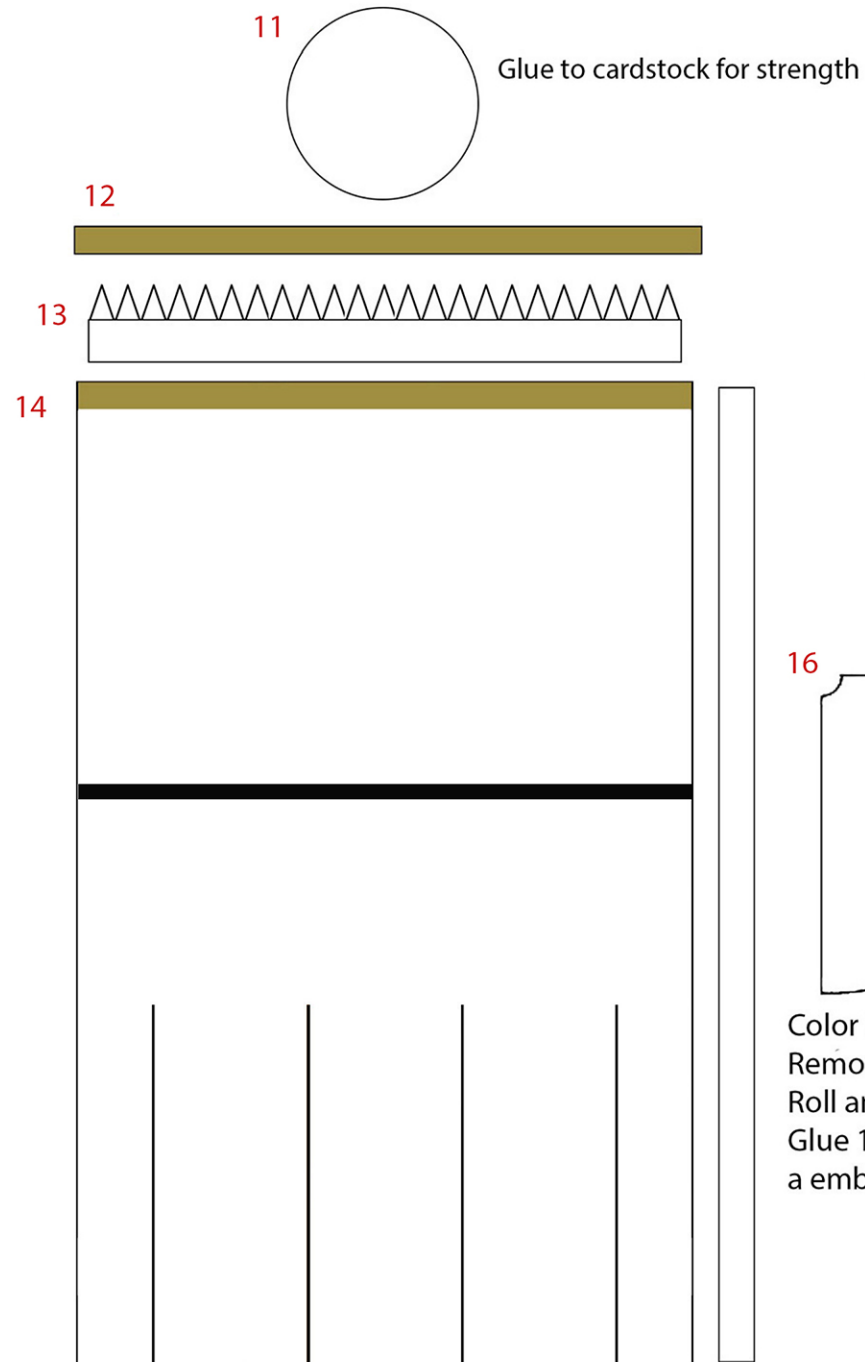
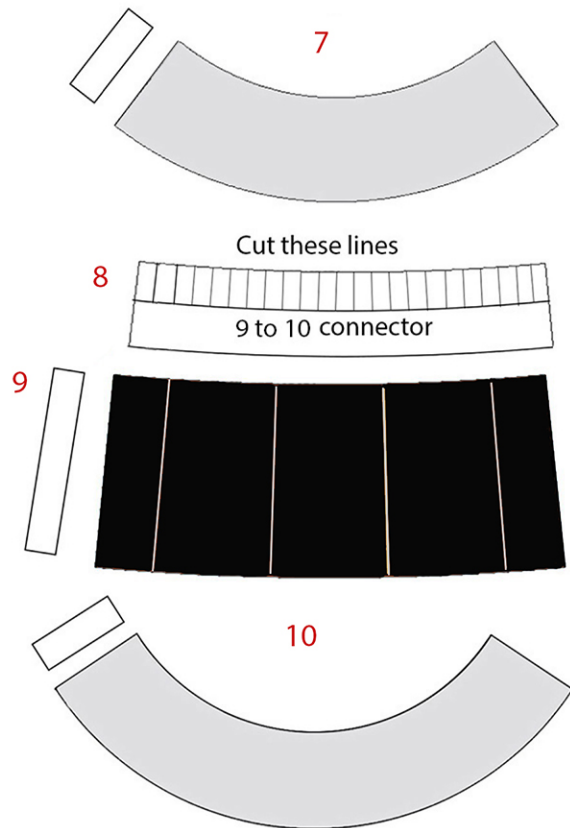
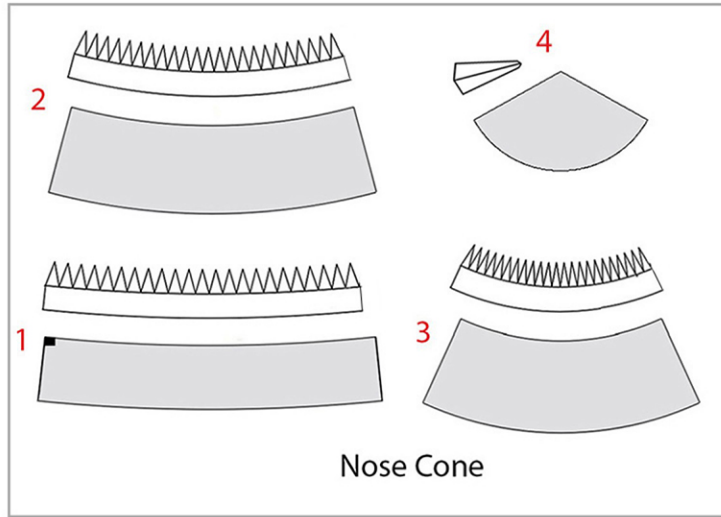
6  Glue to cardstock for strength



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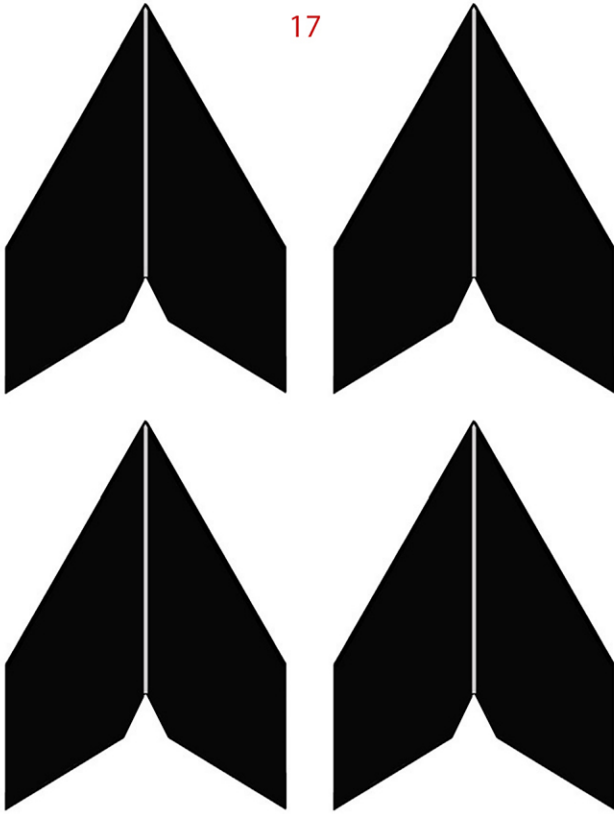
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Color BACK BLACK.
Remove the Black circle from 15
Roll and glue 16 into a cone.
Glue 16 to the BACKSIDE of 15 for
a embedded nozzle.

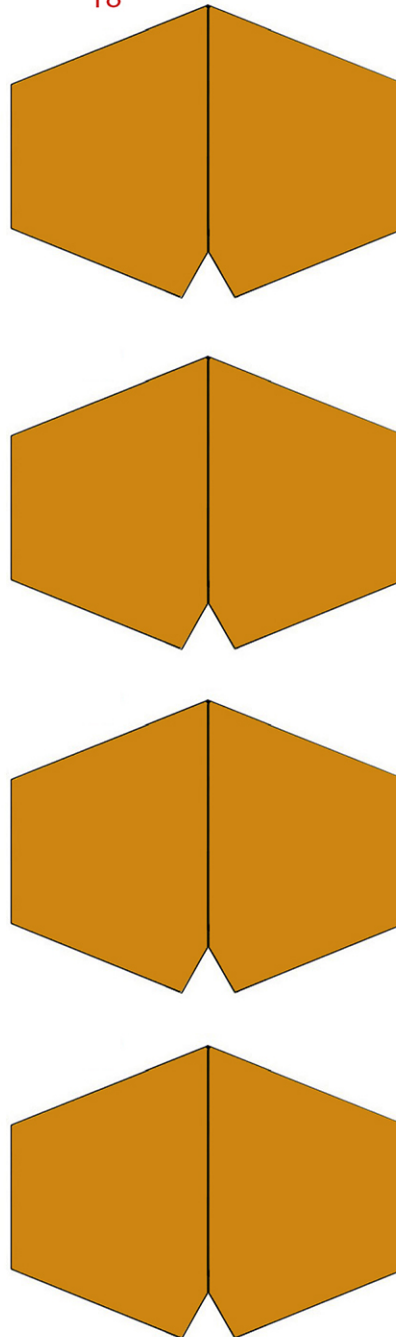
Black Brant XI Sounding Rocket

17

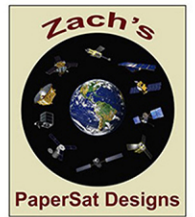
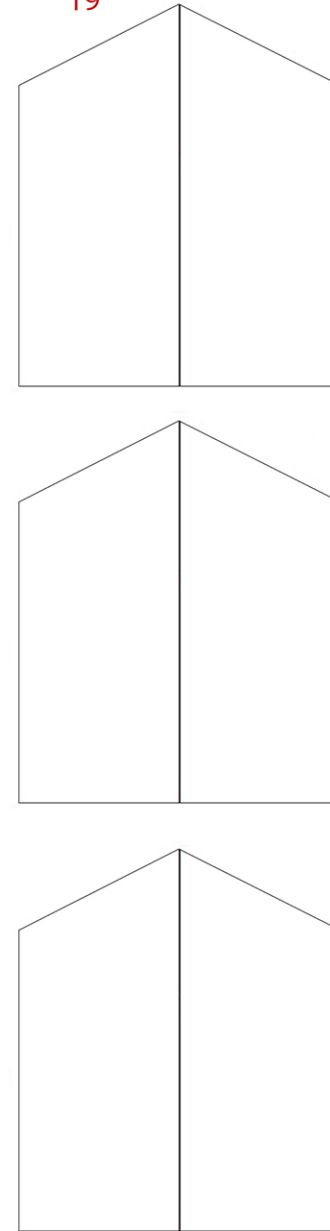


Score and fold all these fins in half

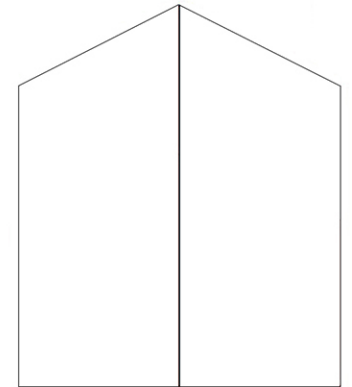
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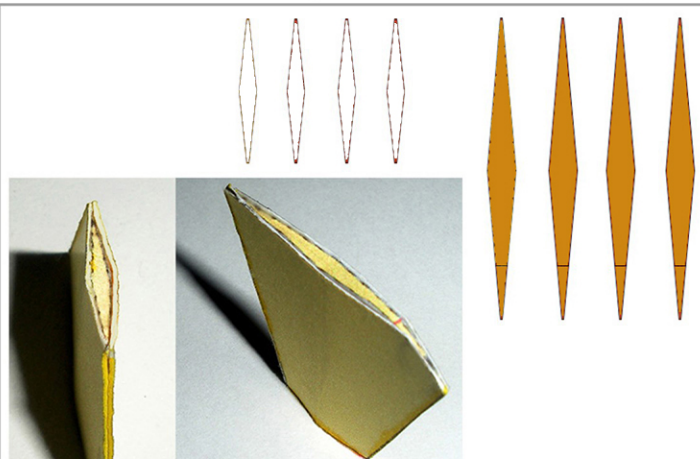
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2016



Optional fin detail



Optional Fin Detail

Cut fins in half on the black line. Glue small diamond shape part to the outer end, glue larger diamond shape part to the inner end.