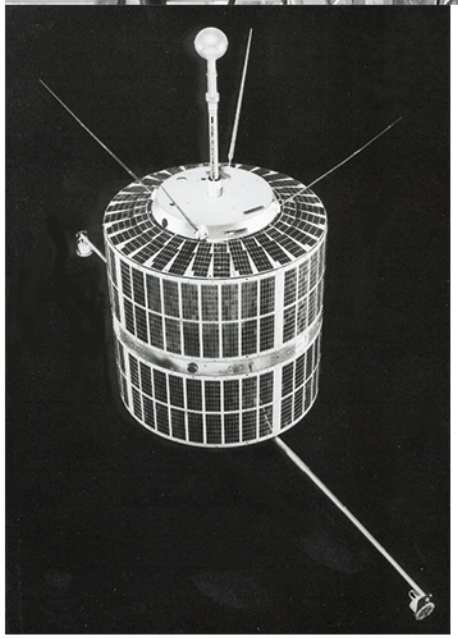
ESRO-1 (European Space Research Organisation)



ESRO 1 is a series of two scientific satellites (ESRO 1A / Aurorae and ESRO 1B /Boreas) developed by the ESRO (ESRO) one of the two European space agencies that preceded ESA . The purpose of these satellites was to study the effects of solar activity on the aural zones .

The two satellites are identical. The body of the satellite is cylindrical in shape, with a diameter of 0.76 m and a height of 0.93 m for a mass is 85 kg . These very simple satellites whose orientation is not stabilized are the direct descendants of the scientific experiments launched by sounding rockets .

The objective of the ESRO 1 program is to study how the regions of space near the magnetic poles in an annular zone called "auroral zone" (between 65 and 75 ° latitude) behave when the magnetic activity Solar energy intensifies (solar flare).The satellites must study in situ the high energy charged particles from the external magnetosphere and propelled by this activity when they plunge into the atmosphere at the poles. The aim is to determine the fine structure of this region of space by studying the particles, luminosity, ionosphere composition and warming processes.

These are the first satellites of the European Space Research Organisation (ESRO, a predecessor of ESA or European Space Agency).

Two satellites of very simple design carrying the in situ analysis of the particles were launched successively in 1968 and 1969 by American rockets Scout B.

ESRO 1A or Aurorae, was launched on 3 October 1968 by a US Scout B rocket from the Vandenberg launch base and placed in a polar orbit with a climax of 1,538 km , a perigee of 258 km and Inclination of 93.7 degrees. After completing its mission by performing in situ measurements of charged particles from the outer magnetosphere and plunging into the polar areas, the satellite is destroyed during its atmospheric re-entry which took place on 26 June 1970. The second copy, ESRO 1B or Boreas was launched on October 1969 By a Scout B rocket from Vandenberg but is placed on a circular orbit and much lower (389 km x 291 km ,inclination of 86 °) to provide measurements complementing those of Aurora. Because of this low altitude, the lifetime of the satellite is a few weeks. It is destroyed, having fulfilled its mission during its atmospheric re-entry , held November 23, 1969.

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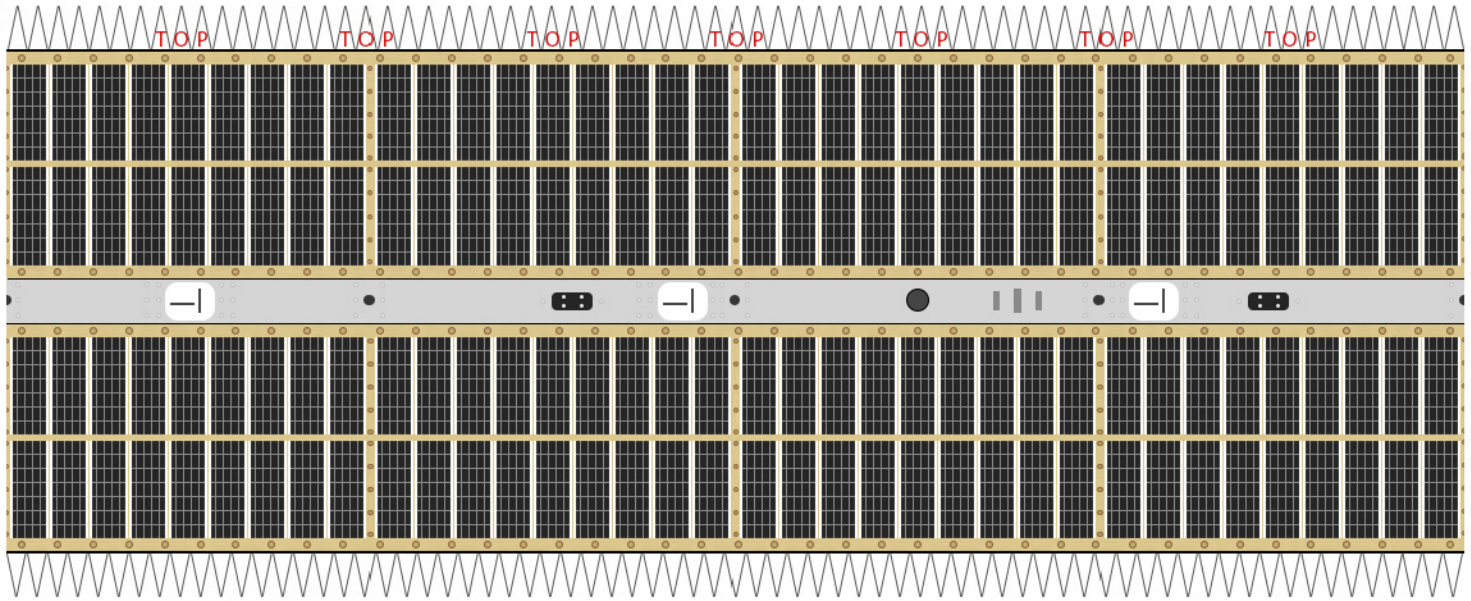
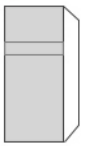
1



11

Color back black, roll to a ring.

12



12a

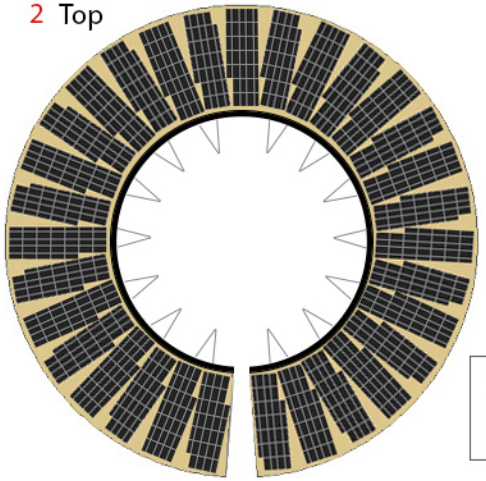
Can roll this into a tube or use a tooth pic cut at the same height, colored grey.

13

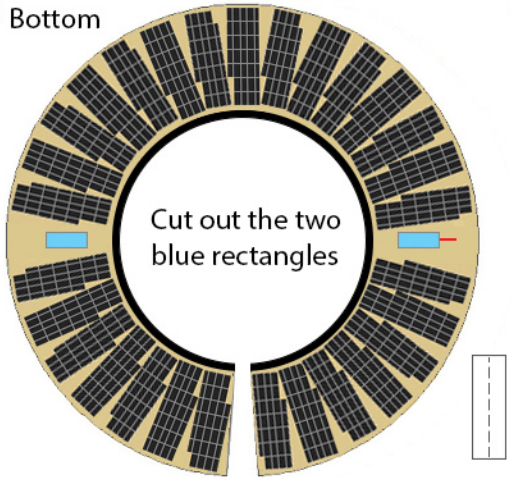
Need a round bead around 6mm diameter, colored grey or silver.

Need four plastic broom straws cut at the same length as the line below (30mm), colored grey or silver for the antennas.

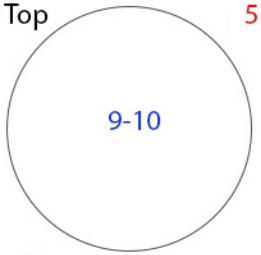
2 Top



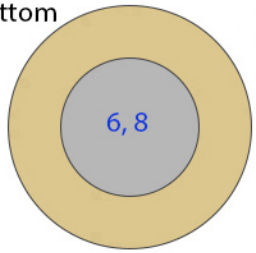
3 Bottom



4 Top



5 Bottom

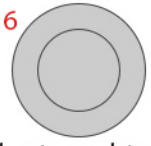


7

Roll to a ring with color inside

8

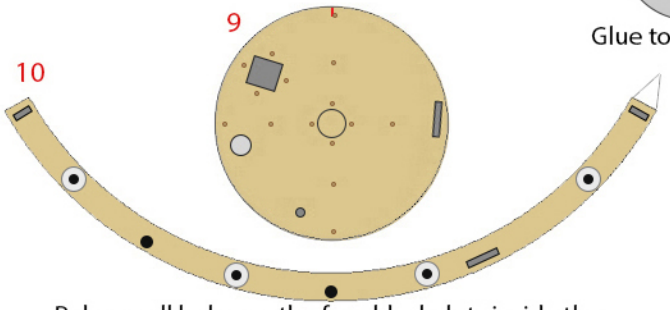
6



Glue to cardstock

9

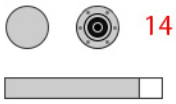
10



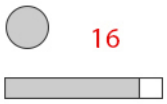
Poke small holes on the four black dots inside the white circles for the antennas.

15

14



16



17

Fold-glue back-to-back

Cut two (2) Acrylic rods (or similar material), around 1.6mm in diameter the same length as the line above (80mm), colored grey or silver.

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Formers, glue to cardstock for strength.
Glue one at each end inside the body cylinder (Part 1) to make your model stronger and more perfectly round.
Gluing some cardstock cut a little shorter than the body inside first will make this easier.