

Van Allen Probes Paper Model and Mobile

vanallenprobes.jhuapl.edu

www.nasa.gov/vanallenprobes

Van Allen Probes Mission

The Van Allen Probes will examine the Van Allen belts, which are two donut-shaped regions of high-energy particles swirling around Earth. The twin spacecraft will fly through both belts, gathering data to help us learn more about the Sun–Earth connection and how magnetic activity in this extreme environment affects work in space and life on the ground.

STUDENT OBJECTIVES

- Read about the Van Allen Probes mission on vanallenprobes.jhuapl.edu.
- Create paper models of the two probes and the radiation belts, and then tie these onto a clothes hanger to make a mobile.
- Write a summary of the Van Allen Probes mission and its importance.

MATERIALS NEEDED

- Scissors, hobby knife, tape, glue, needle, thread, and a clothes hanger.

INSTRUCTIONS

Adult supervision is suggested. Please read all of the instructions before starting. Estimated time: 2 hours.

VAN ALLEN PROBES PAPER MODELS (2)

A DOCKING RING

- Cut out the **Docking Ring**, including all flaps and the end flap.
- Bring together **A-1** and **A-2** ends and glue or tape **A-1** under the end of **A-2**.

B PROBE BODY

- Cut the **Probe Body** along all of the outside lines. Fold at each vertical line.
- Cut through the four orange curved lines (slits) around the circle of part **B-4**.
- Insert the four **Docking Ring** points into these slits and tape.
- Fold all of the flaps down on part **B-2** and part **B-4**.
- Bring together **B-1** and **B-3**. Tape or glue flap **B-3** under **B-1**.
- Fold over part **B-2** and tape or glue flaps to the **B-1/B-3** part just assembled. Do the same with **Solar Panel Top B-4** (see **Diagram 1**).

C SOLAR PANEL TOP

- Cut out the entire **Solar Panel Top**. Punch needle and thread through the red circle, tie a knot and tape to underside, keeping about 8 inches of thread to tie to the clothes hanger for the mobile. Make sure that the thread is coming out of the hole on the color side of the **Solar Panel Top**. Paste the **Solar Panel Top** to the top of the **Probe Body** at **B-2** (see **Diagram 2**).

Repeat steps **A–C** for the second Van Allen Probe model.

VAN ALLEN PROBES MOBILE

D EARTH'S RADIATION BELTS (Two-Sided)

- Cut out **D-1 Front** and **D-2 Back** of the **Earth's Radiation Belts**. Glue them together with the color side out. Punch a hole in the white dot, insert a piece of thread, and tie a knot. Leave 4 inches of thread to tie onto the middle of the clothes hanger. Tie each paper model onto the clothes hanger: one on the left and one on the right of the **Earth's Radiation Belts** (see **Diagram 2**).

CONGRATULATIONS! You now have your own mobile of the two Van Allen Probes along with Earth's radiation belts.

www.nasa.gov



APL

A DOCKING RING

Glue or tape flap A-1 under A-2 to form a circle.



Insert these points into the Probe Body B-4 orange slits, then tape down.

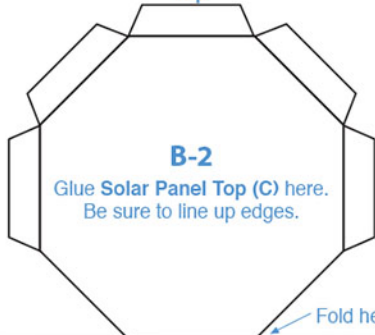
Glue or tape flap A-1 under A-2 to form a circle.



Insert these points into the Probe Body B-4 orange slits, then tape down.

B PROBE BODY

Top



Glue Solar Panel Top (C) here.
Be sure to line up edges.

Fold flaps down and glue to each side.

B-1

Fold here

B-3



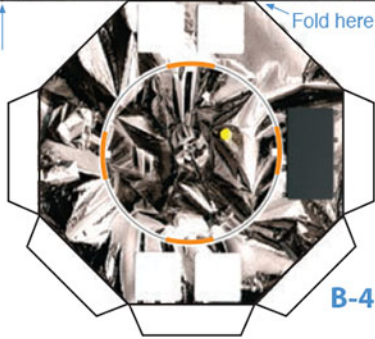
Fold along vertical lines.

Fold flaps down and glue to each side.

Fold here

Fold along vertical lines.

Tape or glue this flap under B-1 panel.



B-4

Bottom

Cut four orange slits to insert the A: Docking Ring points.

B-1



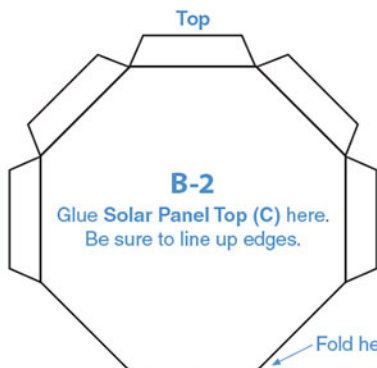
Fold along vertical lines.

Fold flaps down and glue to each side.

D

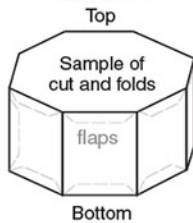
D-1





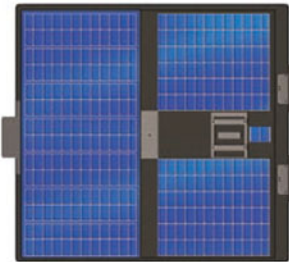
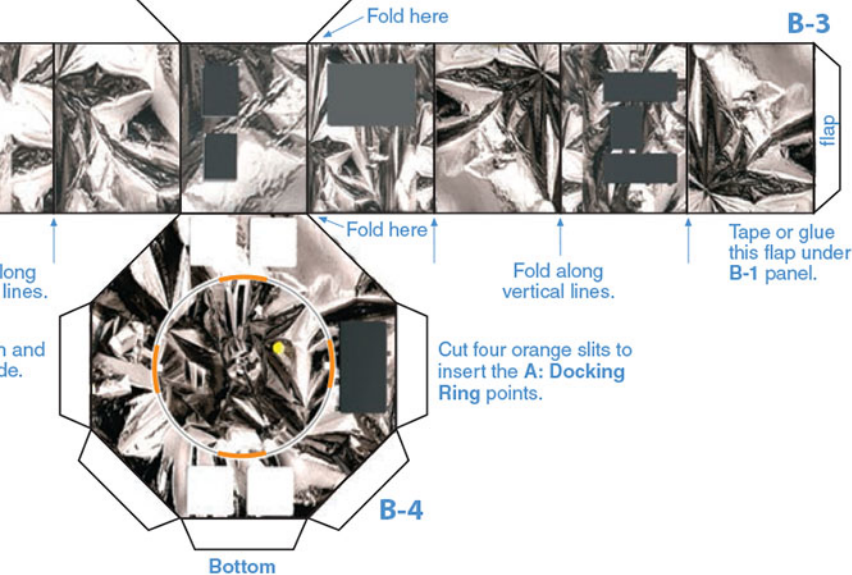
Fold flaps down and glue to each side.

DIAGRAM 1



C SOLAR PANEL TOP

Punch a hole in the red circle with a needle. Pull a piece of thread through this hole and tape it to the underside, leaving 8 inches of thread. Tie the other end of the thread to the clothes hanger.

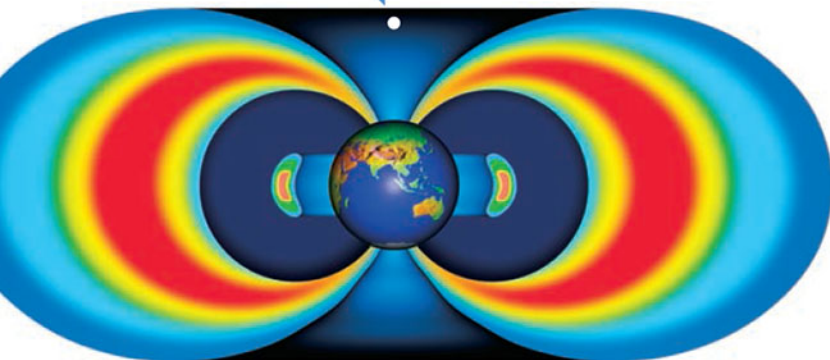


EARTH'S RADIATION BELTS (Two-Sided)

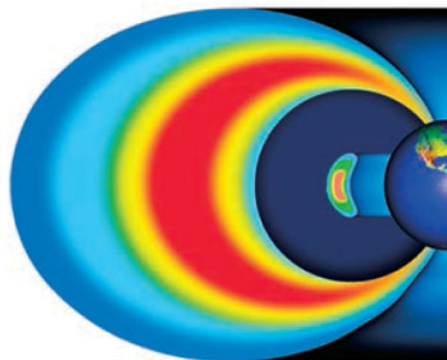
Punch a hole here after gluing D-1 and D-2 together (color sides out).

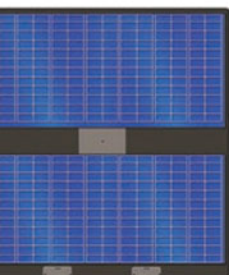
Cut out the two sides of the radiation belts below. Glue them together with the color side out. Punch a hole in the white dot, insert a piece of thread through the hole, and tie a knot. Leave 4 inches of thread to tie onto the middle of the clothes hanger.

D-1 Front



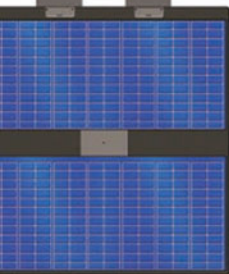
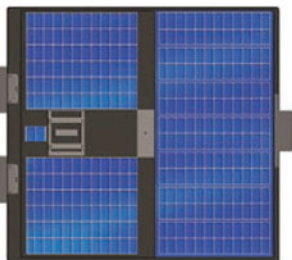
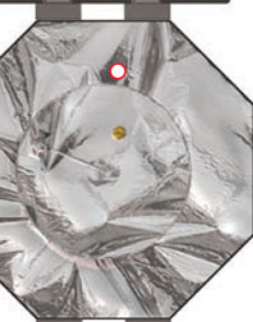
D-2 Back



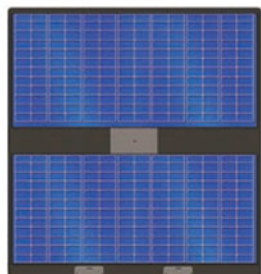


Cut out around all outside lines.

Paste this on top of the Probe Body at B-2, making sure to line up edges.



Punch a hole in the red circle with a needle. Pull a piece of thread through this hole and tape it to the underside, leaving 8 inches of thread. Tie the other end of the thread to the clothes hanger.



Cut out around all outside lines.

Paste this on top of the Probe Body at B-2, making sure to line up edges.

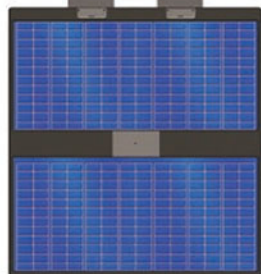
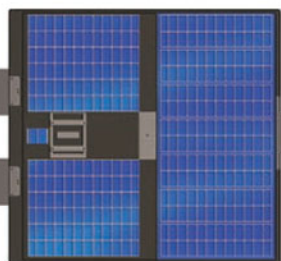
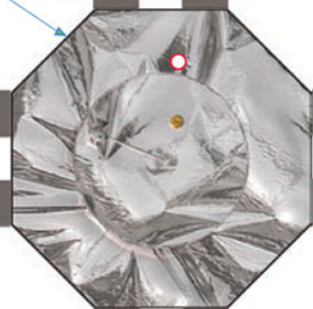
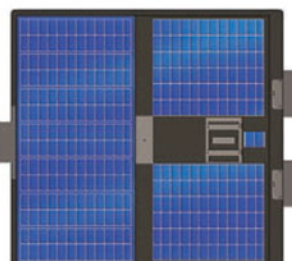


DIAGRAM 2
Sample Van Allen
Probes mobile

