



Public Outreach

- Make and Take Activity

What You'll Need

- *My Place In Space Postcard*
- Example of postcard
- Pens or markers
- Table

Preparation

- Lay all materials on the table.
- Make an example postcard to show visitors how it might look, or use the prepared example from the lesson plan.

Assessment

Finish the activity by asking questions that assess whether participants can do the following:

- State that the Solar System has a boundary.
- Identify the Heliopause as our Solar System's boundary.
- Describe IBEX as a NASA mission to study the boundary of the Solar System.

Postcards from Space!

About this Activity

Using information from the My Place in Space postcard, participants will write and/or draw a postcard to friends and family as if they had gone beyond the interstellar boundary of our Solar System, out into the Milky Way Galaxy.

After completing the activity, participants will be able to:

- State that the Solar System has a boundary.
- Identify the Heliopause as our Solar System's boundary.
- Describe IBEX as a NASA mission to study the boundary of the Solar System.

To Do and Notice

1. Ask participants to pretend that they have taken a journey from Earth through the Solar System out into the Milky Way Galaxy and they are writing a postcard to tell their friends about their journey. Explain that they will write about or draw the real and imaginary boundaries they crossed on their journey. Display an example postcard.
2. Pass out blank postcard template. On the body of the postcard, participants will write about or draw the boundaries they crossed as they traveled past the Solar System's boundary.
3. Hand out the *My Place in Space* postcard. Participants will use the front of the postcard to identify the real and imaginary boundaries they crossed on their voyage. Participants may write about or draw these boundaries in the body of their postcard.
4. A facilitator may help participants identify these boundaries by talking about the images on the postcard. For example, using the image of the United States on the handout a facilitator can talk about going beyond the borders of a country. Next, using the image of Earth on the handout the facilitator can talk about traveling outside the boundary of Earth's atmosphere. The facilitator can then use the image of the Solar System to talk about the Sun as the center of our Solar System. The Solar System has boundaries created by the Sun. Finally the facilitator may use the image of the Solar System with the Heliopause to talk about the outer boundary of our Solar System. The boundary, or interstellar boundary is created as the Sun's solar wind collides with interstellar medium, the gas and dust that exists between stars. The solar wind is a plasma that blows off of the Sun. It fills the Solar System. The Sun's solar wind blows out into space, carving a protective bubble around the Solar System called the Heliosphere. The place where the solar wind stops is called the Heliopause. The Heliopause is the boundary of the Solar System.
5. Encourage participants to describe or label the boundaries they crossed.
6. After participants have written about or drawn their voyage beyond the boundary of the Solar System, they will fill in their friend's address on the postcard.
7. The facilitator may help the participant fill out the address.
8. As participants finish their postcards, the facilitator can connect the activity to the IBEX mission. Just as the participants learned about the Solar System's boundary, the IBEX spacecraft will learn more about this boundary. As it orbits Earth, the IBEX spacecraft will use sensors to collect small particles that have come from the edge of the Solar System in an effort to map the boundary of the Solar System.
9. Participants may take their postcard home with them.

Related Websites

The IBEX mission page discusses plasma for a general audience.

<http://www.ibex.swri.edu>

The IBEX Electronic Resource for Museum Educators explains plasma and IBEX.

<http://ibex.swri.edu/planetaria/index.shtml>

The Coalition for Plasma Science has educational publications about plasma.

<http://www.plasmacoalition.org/edmaterials.htm>

Example

POSTCARDS FROM SPACE!

Pretend that you took a trip past our Solar System into the Milky Way Galaxy. Write or draw a message on a postcard that describes your journey to a friend or family member. Be sure to describe the real and imaginary boundaries you crossed on your journey.

Front of Postcard

GREETINGS FROM SPACE! Please write about your pretend journey past the boundary of our Solar System below. Describe the real and imaginary boundaries you crossed on your journey.

Dear John,

I just got back from my journey beyond our Solar System. My journey began as I crossed the borders of the United States. We left Earth's atmosphere and traveled deep into our Solar System. I saw planets, comets, asteroids and dwarf planets, all of which orbit our Sun! Long after I passed the dwarf planet Pluto, I reached the outer boundary of our Solar System. Our Sun's solar wind blows out into space carving a protective bubble around our solar system called the Heliosphere. It was spectacular to reach the boundary of our Solar System! I can't wait until the IBEX mission completes its map of the whole boundary.

Sincerely,

Carla

Back of Postcard

Please address your postcard to a friend or family member.

NAME: *John Smith*

STREET: *1300 Lake Shore Drive*

CITY, STATE: *Chicago, IL*

ZIP CODE: *60605*

COUNTRY: *United States*

PLANET: *Earth*

SYSTEM: *Solar System*

SOLAR SYSTEM BOUNDARY: *Heliosphere*

GALAXY: *Milky Way*