



## The Heliosphere Lesson Plan

**Time:** 40 minutes

**Goals:** To gain an understanding of the size of the Heliosphere and the nature of the polar auroras.

**Objectives:** Students will:

- Watch the “Heliosphere” segment of the “How far away is it” video book
- Optionally if computer connections are available access the “Sentinels of the Heliosphere” website and take a look at what is happening with the Sun right now.
- Take a short quiz

**Materials:**

- Internet connection with a computer for viewing [“The Heliosphere” segment on YouTube](#)

**Directions:**

- Introduce the Heliosphere segment as the last segment in our chapter on the Solar System. Point out that we’ll be learning about the auroras at the north and south poles.
- Show the video.
- Review what they saw:
  - How vast the Heliosphere is.
  - How large our fleet of satellites monitoring the Heliosphere is.
  - How the solar wind creates the aurora borealis.
  - How important it is to take good care of the only planet we have, the Earth.
- With a computer connection: Go to the Goddard Space Flight website:  
<http://www.nasa.gov/centers/goddard/home/index.html>
  - Hover over ‘Missions’ in the navigation window – upper left of screen.
  - Click on the pull down item ‘Present’.
  - Scroll down to STEREO and click on it.
  - Take a look at what is going on with the Sun.

## How Far Away Is It – The Heliosphere



### Assessment:

- Take a simple quiz. Print and distribute the quiz on page 3. Here are the answers:
  - What is the name of the final barrier at the edge of the Heliosphere that separates the Sun's domain from interstellar space?  
**Answer:** b) Bow Shock
  - What is the name of the Earth's magnetic field pushed back by the solar wind?  
**Answer:** c) Magnetosphere
  - What do we call it when an electron jumps from one energy level to another?  
**Answer:** d) Quantum leap



## The Heliosphere quiz

- What is the name of the final barrier at the edge of the Heliosphere that separates the Sun's domain from interstellar space?
  - a) Termination Shock
  - b) Bow Shock
  - c) Kuiper Belt
  - d) Event Horizon
  
- What is the name of the Earth's magnetic field pushed back by the solar wind?
  - a) Heliosphere
  - b) Atmosphere
  - c) Magnetosphere
  - d) Heliopause
  
- What do we call it when an electron jumps from one energy level to another?
  - a) Electron transition
  - b) Energy pop
  - c) Photon jump
  - d) Quantum leap

