



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

