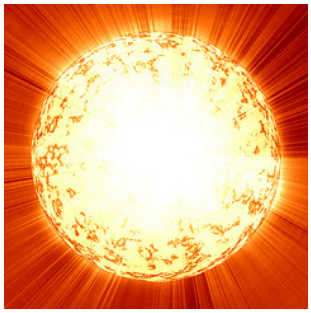
Space Weather

Activity



We think of space as a vast void. However, the space within our solar system is not as empty as it seems. An atmosphere created by the Sun surrounds and fills the solar system. As a result, our solar system experiences cosmic weather, complete with phenomena similar to wind, clouds, storms and hurricanes. Collectively, these phenomena are commonly referred to as space weather.

Procedure

1. Complete the web quest to learn about space weather, the types of radiation emitted from the Sun, and how that radiation gets to Earth.
2. Search for “Space Weather Center.” Choose the tab “Living With a Star.” Read through the sections entitled Overview and The Sun’s Secrets.
3. Draw a diagram in your lab journal of the layers and features of the Sun.

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Activity, continued

4. Write a description in your lab journal of each layer and feature of the Sun.

Layers and Features of the Sun		
Layer/Feature	Location	Description
Core		
Radiative Zone		
Convection Zone		
Photosphere		
Chromosphere		
Corona		
Sunspot		
Flare		
Prominence		

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Activity, continued

5. Answer the following questions in your lab journal.
   a. What type(s) of radiation does Earth receive from the Sun and how is each produced?

   b. How does the radiation energy reach Earth?

   c. How do solar flares affect the amount of radiation emitted from the Sun?

6. Read “Our Dynamic Sun.”
7. Create a T-chart in your lab journal to compare and contrast magnetic loops, prominences, flares, and CMEs.

Magnetic Loops	Prominences	Flares	CMEs

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Activity, continued

8. Read “The Solar Cycle.”
9. Answer the following questions in your lab journal.
   a. What is the solar cycle?

   b. What is the effect of variations in the number of sunspots?

   c. How does the scale, proportion, or quantity of sunspots affect the significance of space weather?