

Secrets of the Sun Post Movie Visit

- 1) What is the approximate age of our Sun? _____
- 2) Stars like our Sun formed from a huge cloud of _____ and _____.
- 3) The following words all describe different levels of the Sun's structure. Arrange them in order from lowest level to highest level:

Corona Photosphere Chromosphere
- 4) Does our Sun rotate approximately once a day, once a month, or once a year?
- 5) Are sunspots generally larger or smaller than the Earth?
- 6) Solar prominences are bright loops of gas that come off of the Sun. Are solar prominences mainly due to magnetic or electric fields?
- 7) Choose the correct statement:
 - a. In the Sun's core, fusion takes place (lighter atoms combine to form heavier atoms).
 - b. In the Sun's core, fission takes place (heavier atoms split to form lighter atoms).
- 8) When charged particles from the Sun hit the Earth's atmosphere, we see a beautiful display of light in the sky. These lights are called _____.
- 9) When our Sun dies, it will become a cocoon of light and gas called a planetary _____. It will NOT explode as a supernova.

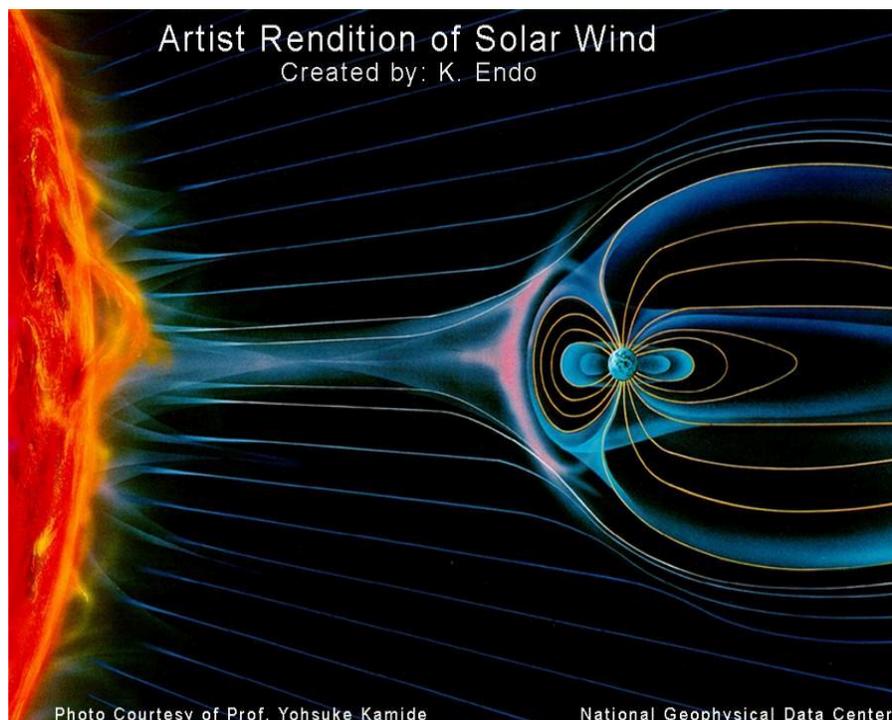
Auroras

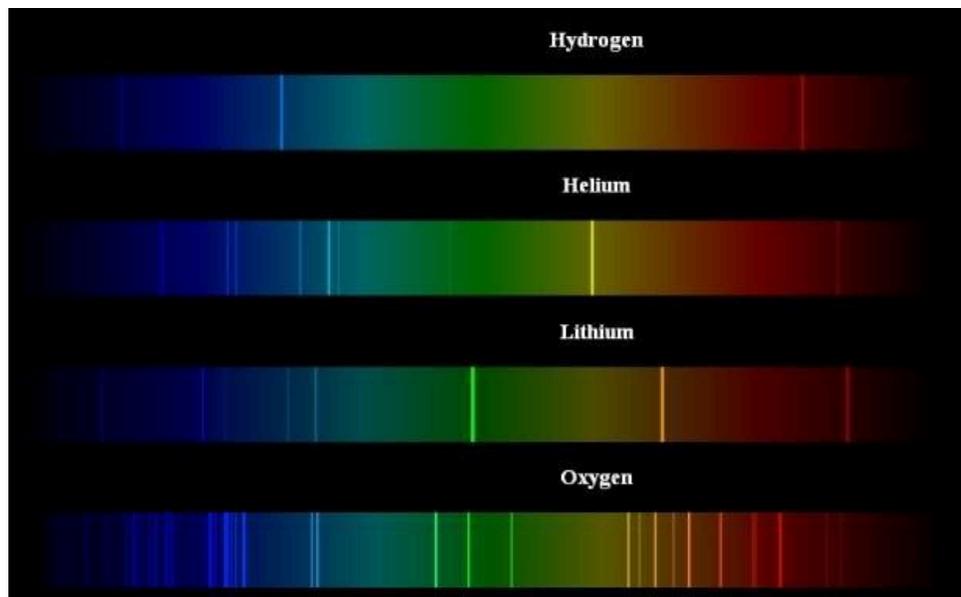
Observe the images of Auroras. They can also be called “northern lights”, “aurora borealis”, “polar lights”. The aurora happens in the Earth’s atmosphere – it’s not something that is far away like other planets or other stars.



Look at the picture of the Sun and the Earth below. Little particles from the Sun (smaller than atoms) hit the Earth’s atmosphere and cause the atmosphere to glow. Based on where the lines appear in the image, where are the most glowing light seen?

The aurora can appear different colors because different atoms in the Earth’s atmosphere glow different colors.





This image above shows how different elements emit light. The bright vertical lines indicate colors in which that element shines. For instance, hydrogen shines red and blue.

What colors does lithium emit?

An aurora commonly looks green, like the picture that your teacher showed you earlier. Which two elements emit green light?

Remember that Earth's atmosphere is composed mostly of nitrogen and oxygen. Since an aurora forms in the Earth's atmosphere, which element must be responsible for the green light in an aurora?