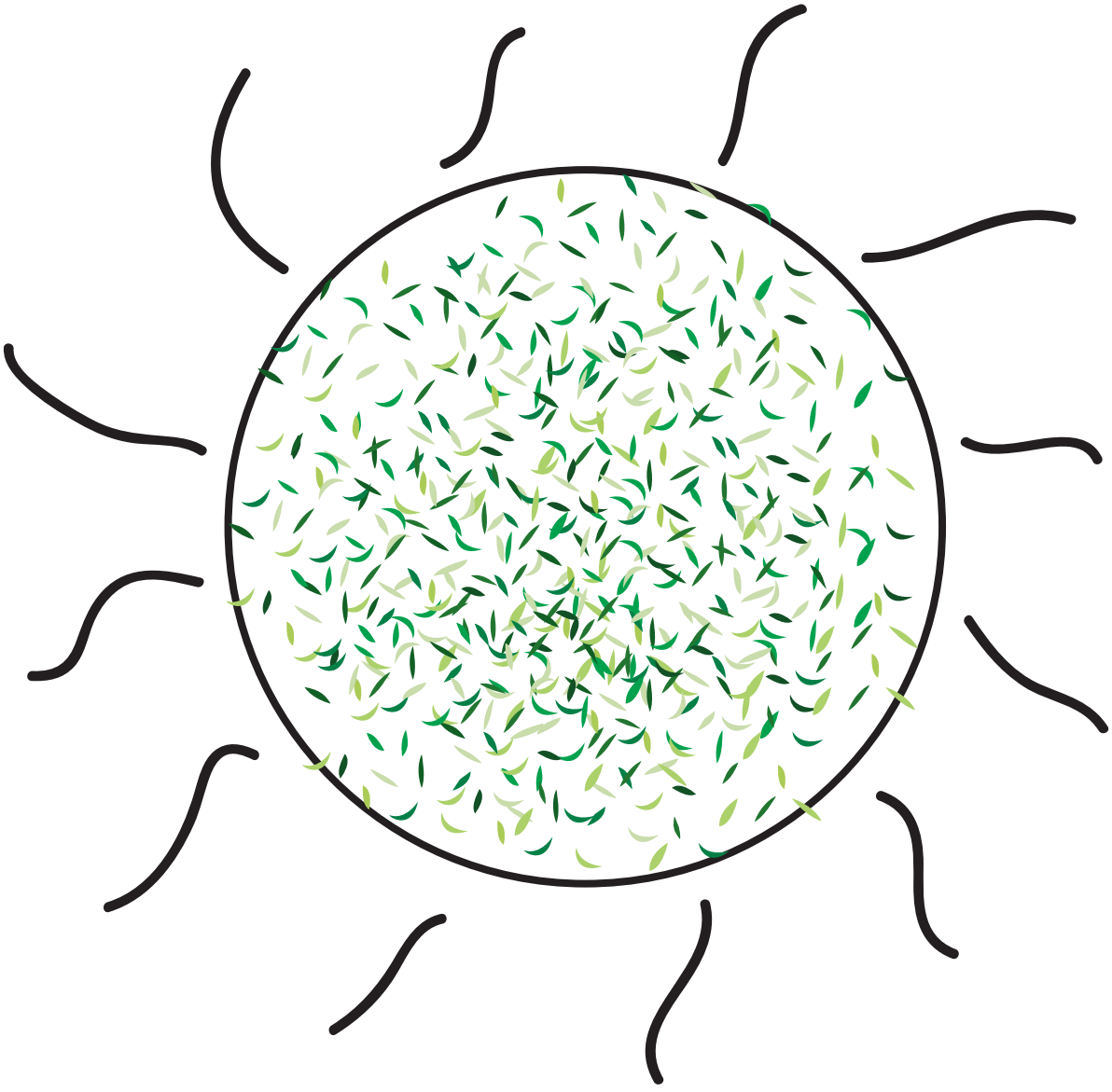
Our Very Own Star: The Sun
Project SEE Edition



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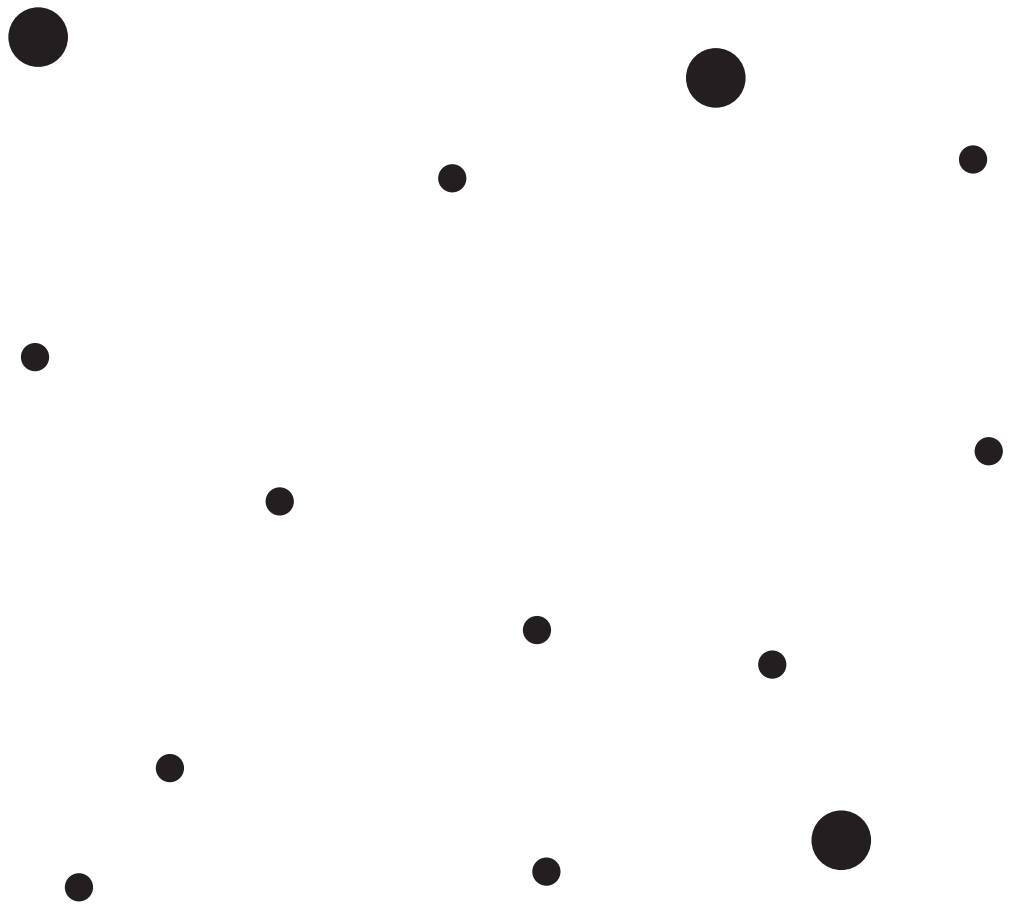
When you look up at the night sky filled with stars, have you ever wondered what a star is? The next illustration is a starry sky. The bigger dots are the brighter stars.

Walk outside on a clear day and say, “Hello!” to our very own star - the Sun! (But don’t ever look directly at the Sun. You may damage your eyes.)

A night sky full of stars



bright star

faint star

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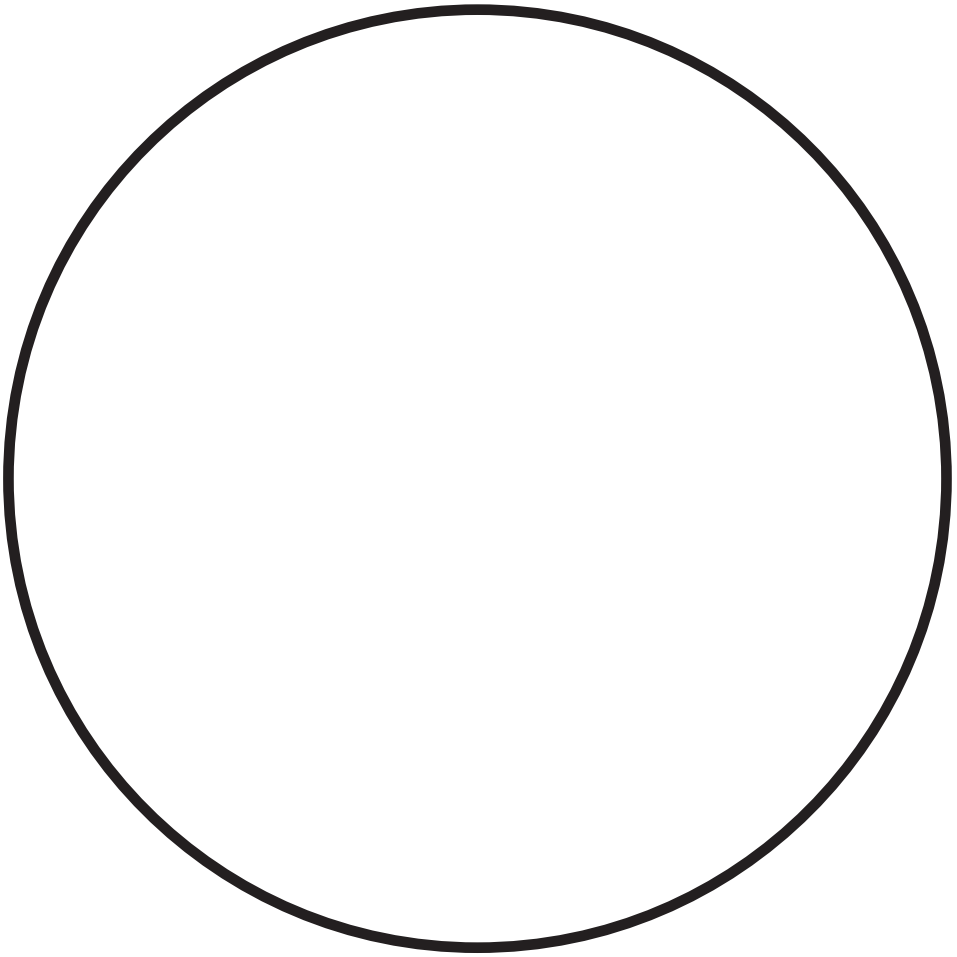
The Sun is very big! Imagine this large circle is the Sun. Then the little dot would be the size of the Earth.

Comparing the size of the Sun and our Earth

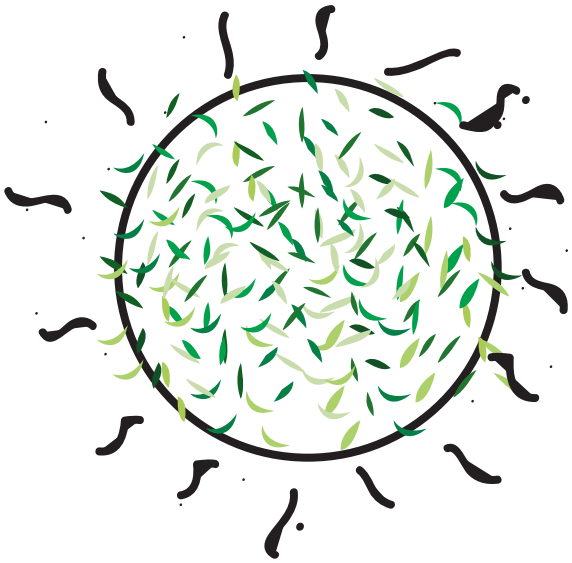


Earth

The Sun seems small when we look at it because it is very far away. The Sun is 93 million miles from Earth! If somehow you could fly an airplane to the Sun, it would take you 26 years. How old would you be when you got to the Sun? How old would you be when you got back?

What do we get from the Sun? The Sun gives us heat and light necessary for us to live. Without the Sun, the Earth would be a frozen ball of ice.

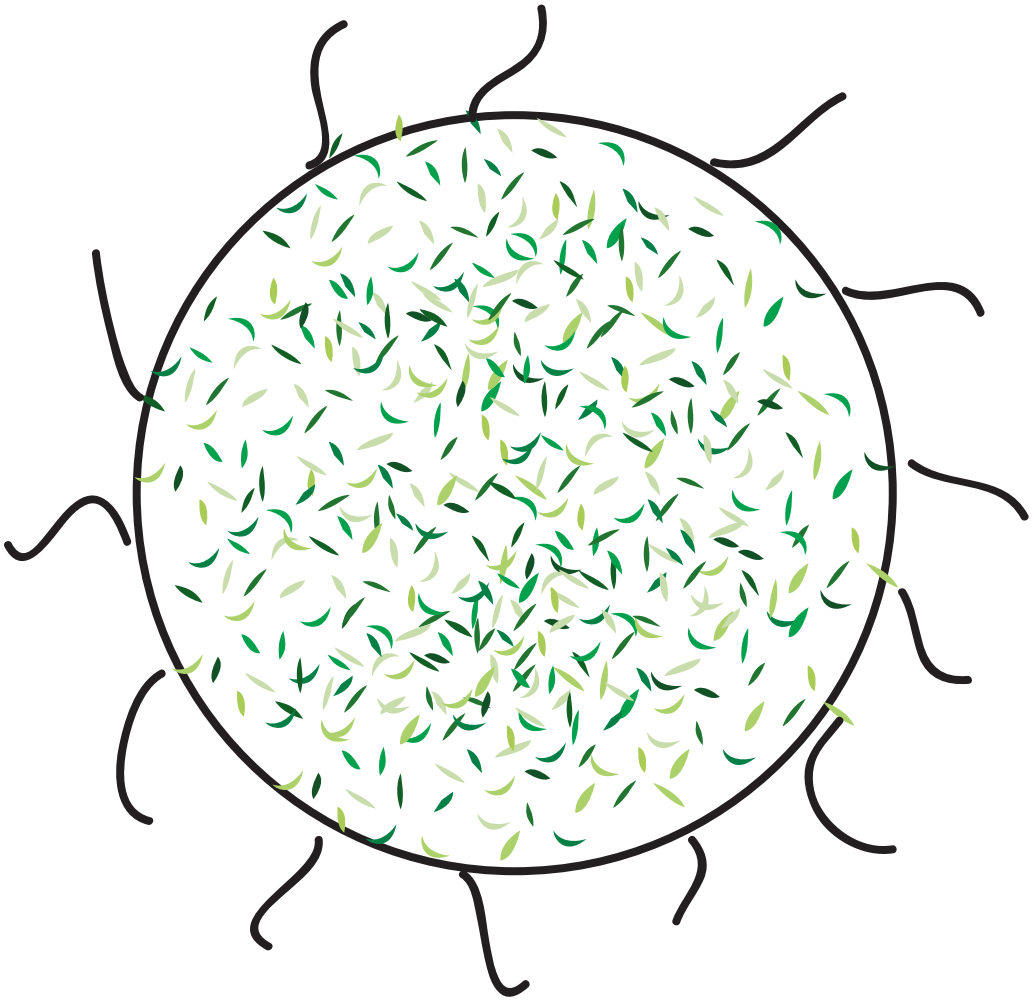
Imagine flying an airplane to the Sun!

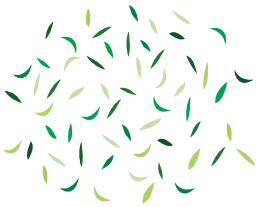


The Sun is a very big ball of burning gases. What happens to water when it is boiling? The water moves up and down and bubbles. The gases on the Sun also move up and down and bubble because the Sun is thousands of degrees hot.

The next picture shows the Sun. The texture inside the Sun represents flowing and bubbling gases.

The Sun





Activity on the Sun

The dark spots on the Sun are large storms called sunspots. They look small on the Sun but are, in fact, as large as the Earth or bigger. Can you imagine a storm as big as the Earth?

There are also huge explosions called solar flares in which the hot gases are spit away from the Sun - like spaghetti sauce that bubbles and spatters. These great storms blast material out of the Sun and into space.

Explore the next picture and locate the sunspots in the Sun and flares around the Sun’s edge.

Sunspots on the Sun and solar flares around the edge of the Sun.

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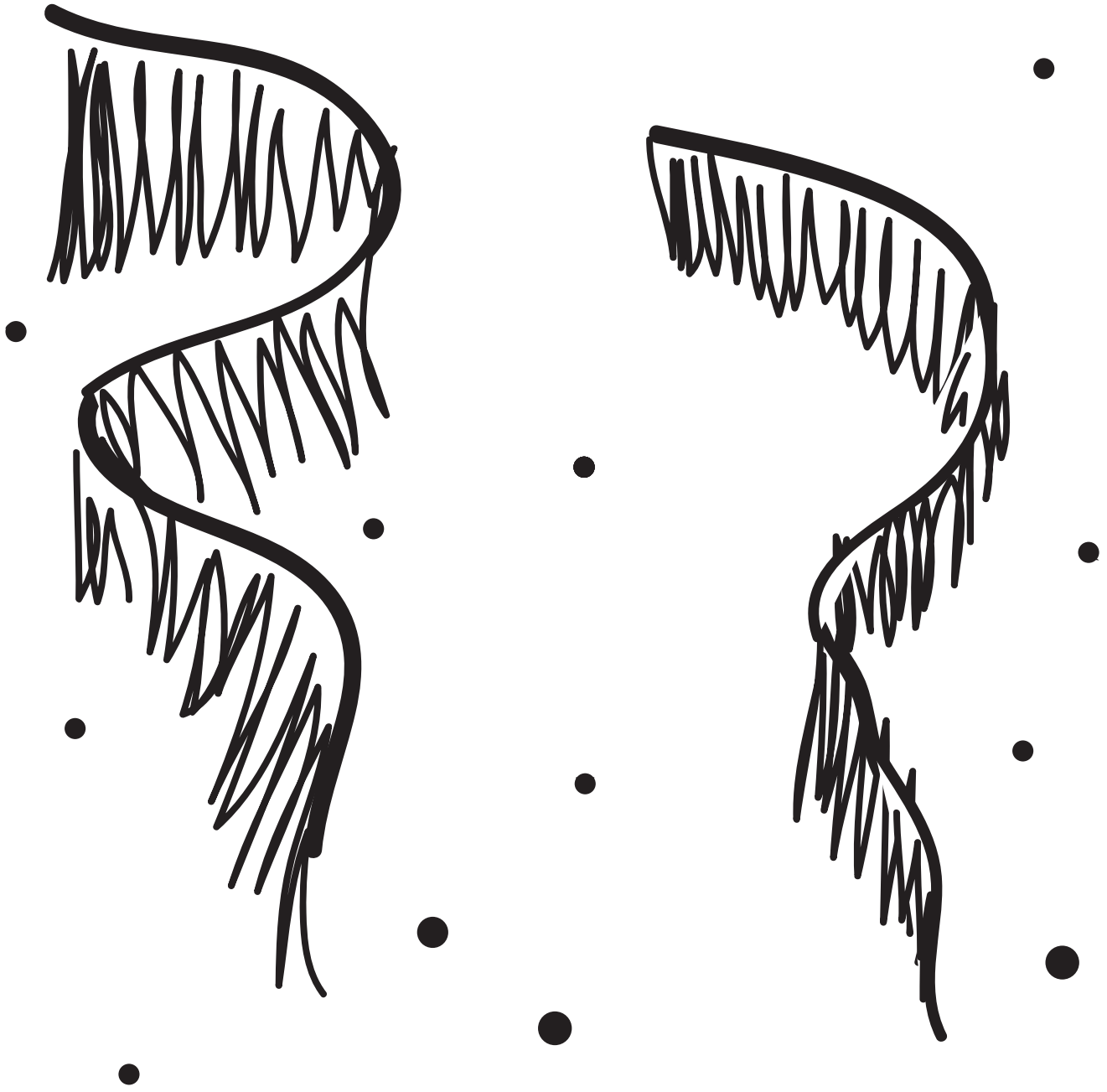
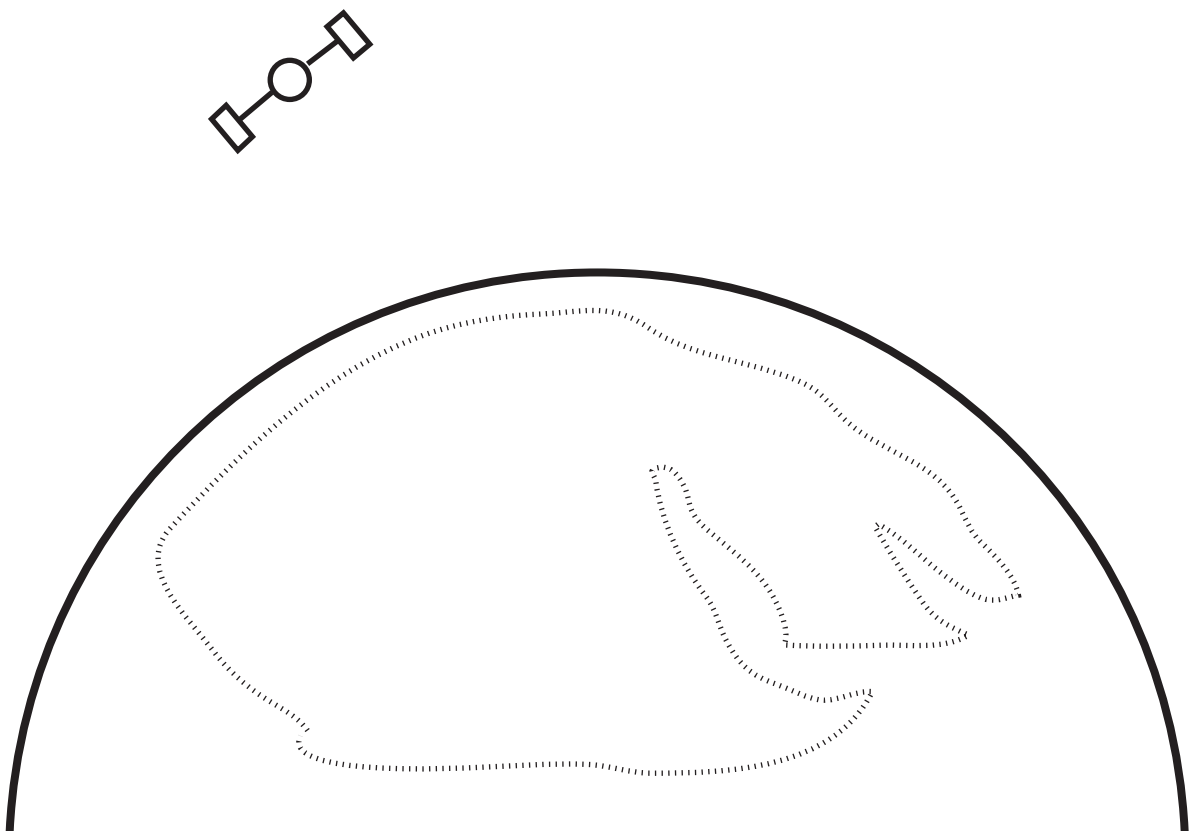
The matter blasted out of the Sun is somewhat like the wind blowing. In fact, this stream of tiny particles is called “solar wind.” It takes one to five days for this wind to reach Earth. Sometimes the solar wind causes beautiful lights in the night sky, called auroras. These lights look like moving sheets of color high in the sky.

The aurora as seen against a starry night sky.



Sometimes the solar winds can disrupt telephones, televisions and radios on Earth. The satellites that carry communication signals can also be disrupted. This can be very dangerous for police, firefighters, airplanes and ships at sea.

A communications satellite orbits the Earth.



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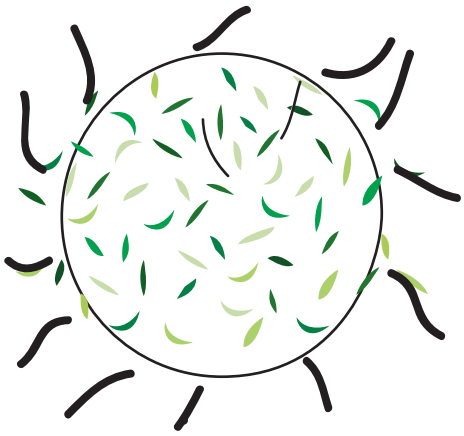
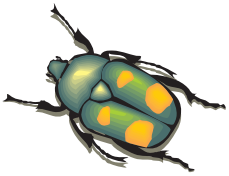
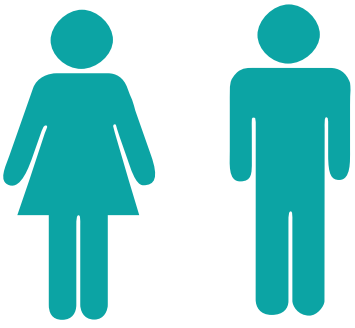
The Sun is important to us because we need its warmth and light. We also study the Sun to learn more about Earth’s weather and climate. NASA helps us to learn more about the Sun by sending satellites into space to study the space weather.

Without the Sun, there would be no trees, insects, animals, or people on Earth.







The Sun - our very own star. It lights the daytime sky and gives us warmth just as the nighttime stars give the sky a special beauty.

If you would like to know more and see movies about the Sun and auroras, please visit the web site http://stp.gsfc.nasa.gov.

This version has been adapted from the original text [Daniel Vong, NASA] by Noreen Grice, Ben Wentworth and Bernhard Beck-Winchatz of the Project SEE team

If you would like to learn more about tactile astronomy, go to the Project SEE web site at http://analyzer.depaul.edu/SEE_Project

The Earth limb surrounded by stars and the Sun in the distance.