

This is a phenomenal website with real-time information about the sun and its behavior. The data comes from the SOHO and ACE satellites, which are in orbit between the Sun and Earth. The information is updated daily, making this a valuable resource for scientists and students alike. **ENJOY!!!**

- 1) Check the **Current Conditions** column on the left.
 - a) What is the current **speed** of the solar wind? Is that *faster* or *slower* than a normal automobile?

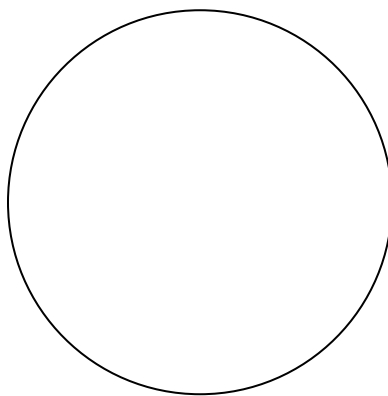
 - b) What is the **density** of the solar wind? Is that *more* or *less* dense than air?

 - c) Where does the data for **speed** and **density** come from? Click on explanation to find out the source of the data, its location and how frequently it is provided.

 - d) Why is the satellite from part c so helpful in making predictions of space weather?

2) Check out the **X** –ray solar flares. What is the **6 hour max** solar flare? Is that a large or small flare? Click on “explanation” for details. Check the graph.

- 3) a) Give a sunspot update by sketching in the current sunspots below: Include #'s.



- b) What does the number of sunspots tell you about the likelihood of solar activity?

4) What's happening on the far side of the sun? Why will this be useful for making predictions?

5) Check the "Current Auroral Oval". This model studies our ionosphere and shows where the conditions are right for auroras to occur. Based on this, should you expect auroras tonight where you live? Focus only on the yellow and orange colors.

6) Coronal holes allow solar wind material to stream to the Earth in greater densities. Is there a coronal hole facing toward the Earth at this time?

Combining all the above information, NASA scientists are able to make forecasts about the future behavior of the sun and its potential impacts on Earth. Look at the NOAA space weather forecasts at the bottom of the left column.

7) What are the odds of an **X**-class solar flare occurring in the next 24 hrs?

8) What are the odds of a SEVERE geomagnetic storm **here** in the next 24 hrs?

9) Now think about yourself and your daily activities. Make a list of 5 things that **COULD** be affected if a major solar storm struck the Earth. **HINT:** Think of satellites and the information and services they provide for us every day.