



# Solar Flare Flip Book

What does the Sun look like over time?

## Description

Create a flip book that shows solar flares erupting from the Sun.

Age Level: 7 and up



## Materials

- printouts of solar flares
- scissors
- binder clip
- stapler

The printouts of the solar flare are found at the end of this activity.



## Time

Preparation: 15 minutes  
Activity: 10 minutes  
Cleanup: 5 minutes

## Step 1

The three pages showing the formation of solar flares were taken during November 2000. Cut out each page along its solid line. Arrange the pages in order, according to the number in the left hand corner of each image.

### Tip

Standard printer paper works well—don't use paper that is too thick.



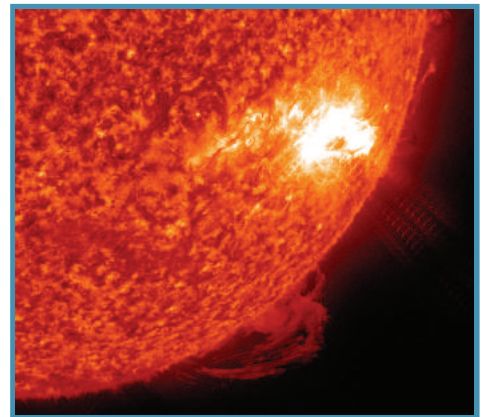
## Step 2

Line up all the pages to match the left edges (opposite the Sun images). You can staple the pages together or use a binder clip to hold them together. Your flip book is ready!



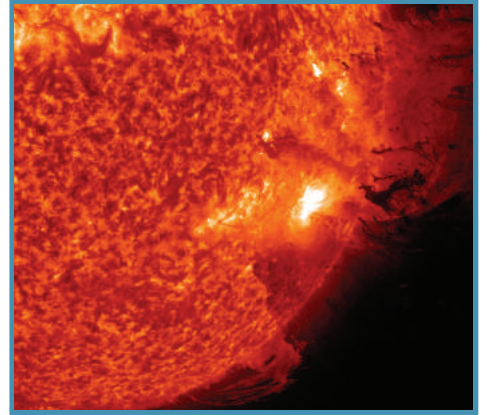
## What's Going on?

A solar flare is a sudden brightening of the Sun's surface, where enormous amounts of energy are released. Solar flares occur in active regions around sunspots. Flares can occur several times a day when the Sun is active, or only a few times a month when the Sun is less active. Most solar flares are smaller than the one in your flip book. One of the largest recorded solar flares was observed in 1859, which caused compass needles to point in the wrong direction and aurora could be seen near the equator.

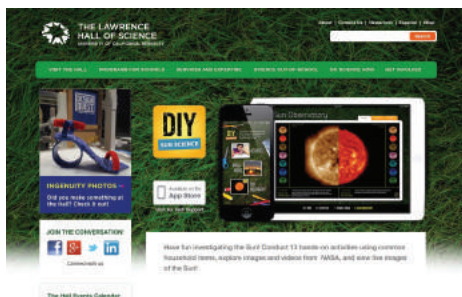


## Coronal Mass Ejections

Where a large solar flare takes place, a coronal mass ejection often follows. These are huge explosions that send large clouds of atoms, electrons and ions flying out into space, at speeds much faster than an airplane (several hundred kilometers per second). These clouds of particles can reach Earth in a few days and disrupt radio communications and other electronic devices. Twenty-five years ago, such a cloud, the size of 36 Earths, left the Sun. Two days later, the energy caused a geomagnetic storm on Earth, which made the power go out in parts of Canada. This left six million people without electricity!



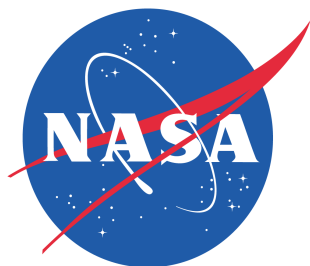
## Learn More



For more info and other activities, visit:

[LawrenceHallOfScience.org/do\\_science\\_now/diy\\_sun\\_science](http://LawrenceHallOfScience.org/do_science_now/diy_sun_science)

## Credits



This project was supported by NASA under award number NNX10AE05G. Any opinions, findings, conclusions or recommendations expressed in this program are those of the author and do not reflect the views of NASA.



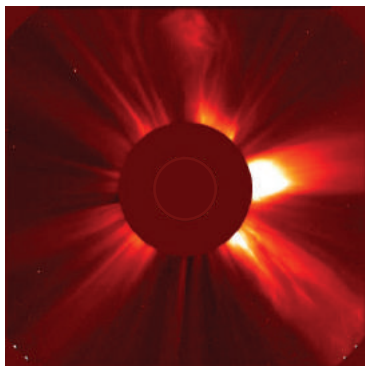
THE LAWRENCE  
HALL OF SCIENCE

The DIY Sun Science app allows families and educators to investigate and learn about the Sun at home, at school, or anywhere you go! The app features thirteen hands-on investigations, as well as images and videos.

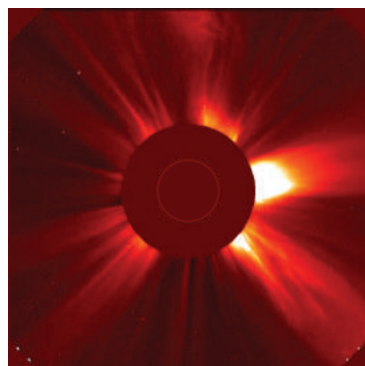
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Activity inspired by "Solar Flip Book," NASA/SOHO. Image 5, NASA/SDO. Image 6, NASA/SDO.

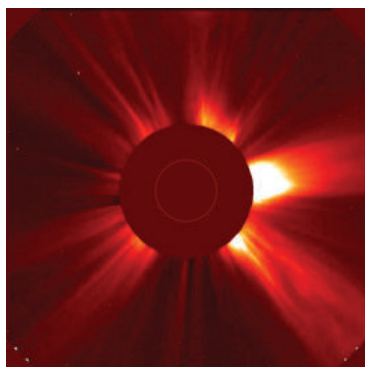
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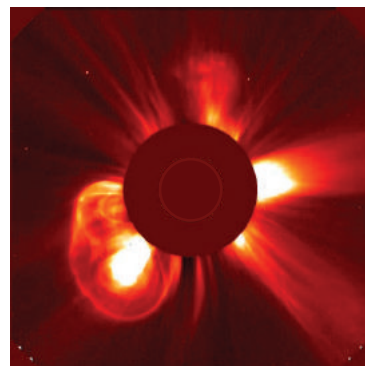
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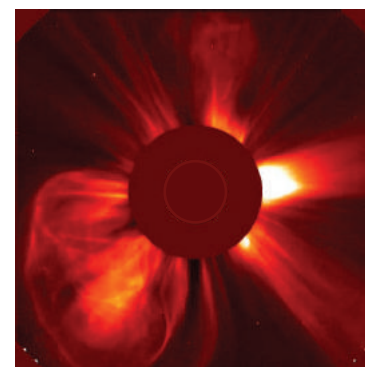
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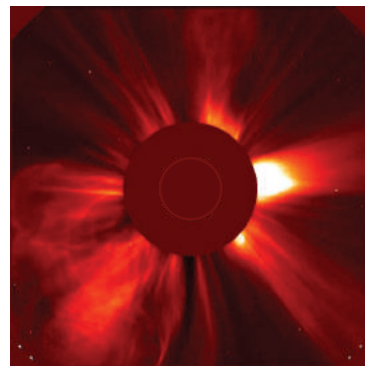
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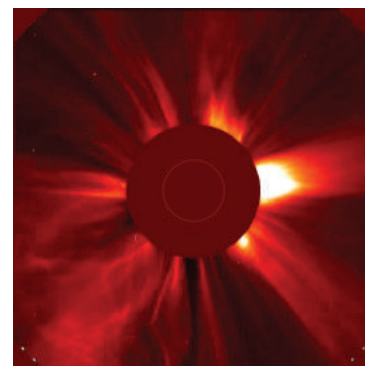
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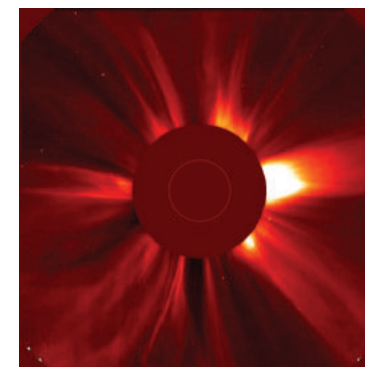
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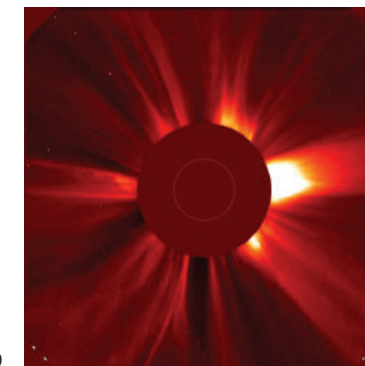
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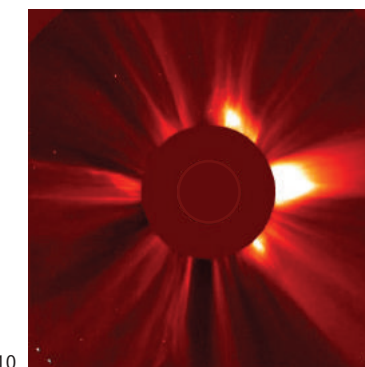
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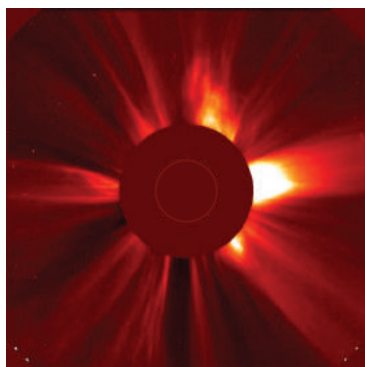


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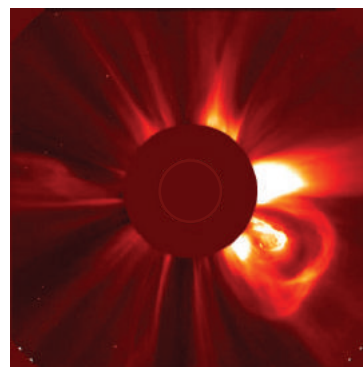




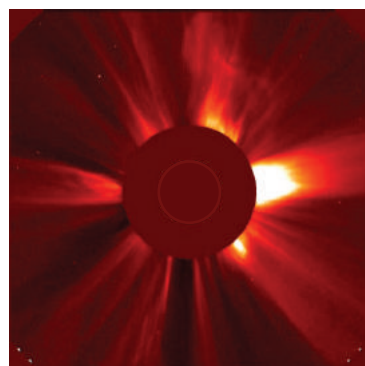
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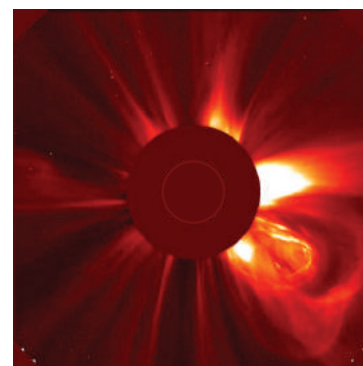
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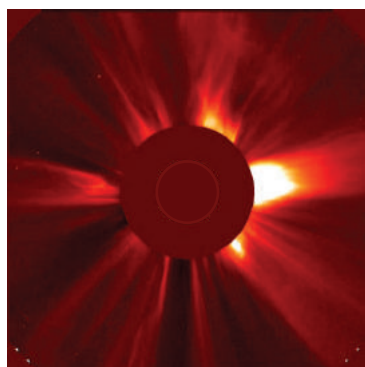
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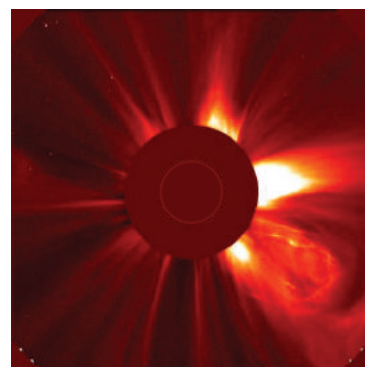
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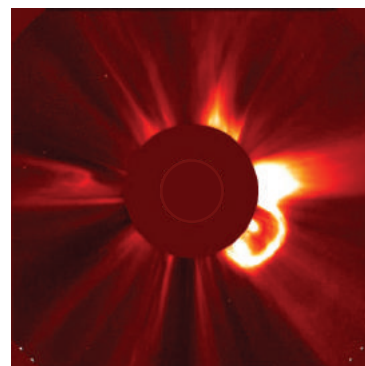
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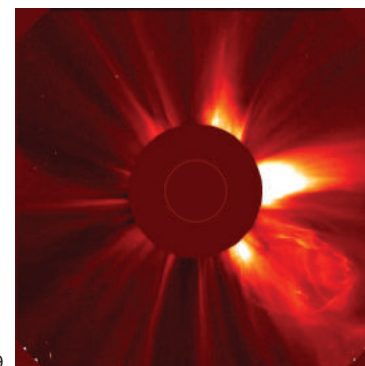
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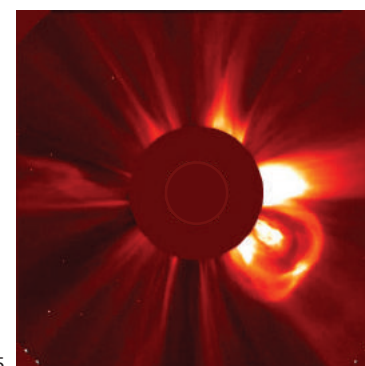
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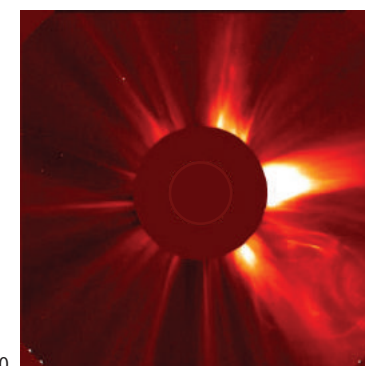
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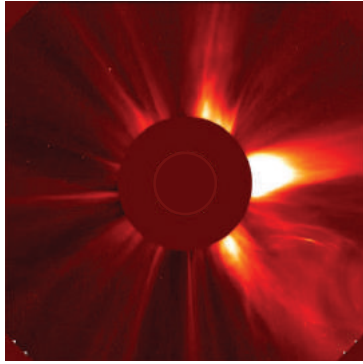
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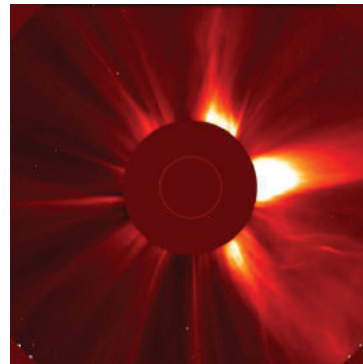
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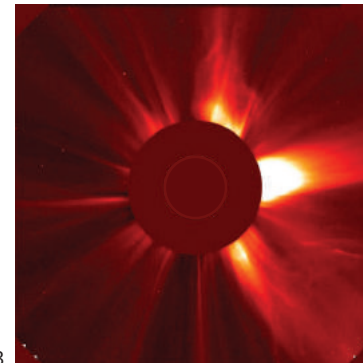
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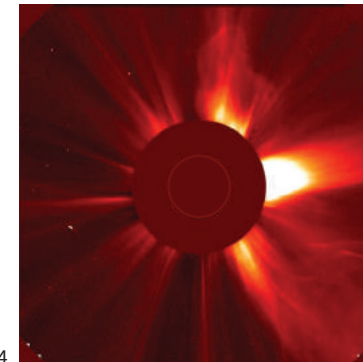
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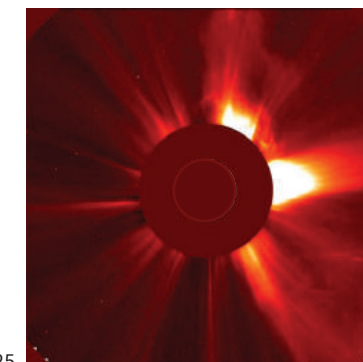
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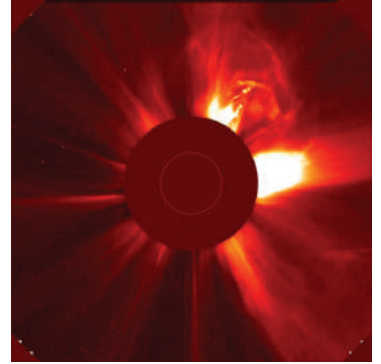
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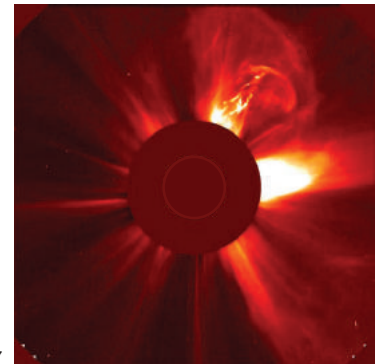
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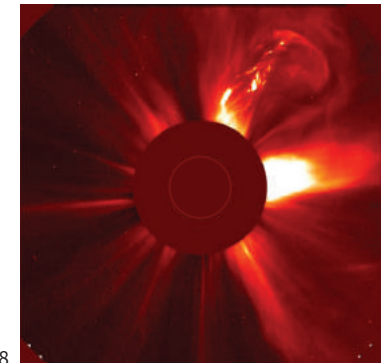
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Images courtesy of SOHO/LASCO C2 consortium. SOHO is a project of international cooperation between ESA and NASA.

The following animation was taken by the SOHO satellite during November 22 - 28, 2000. The red circle in the middle covers the bright Sun so that the area surrounding is easier to see. The light-red ring in the middle of the circle indicates the size of the Sun.

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