



National Aeronautics and  
Space Administration

Educational Product

Educators  
& Students

Grades  
K-12

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# Living With a Star

**Educator Resources  
for Understanding  
Connections  
Between the Sun  
and Earth**



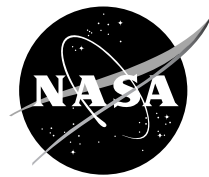


Living With A Star is available in electronic format through NASA Spacelink—one of NASA's electronic resources specifically for the educational community. This publication and other educational products may be accessed at the following address:

***<http://spacelink.nasa.gov/products>***

# Living With A Star

An Educator Guide with Activities in Sun-Earth Sciences



National Aeronautics and  
Space Administration

## About This Educator's Guide

This guide is designed to provide educators with a quick reference to materials and resources that are useful for understanding the connections between the Sun and Earth.

**The Sun-Earth Connection Education Forum** NASA/GSFC • UCB/SSL

### What is SEC?

Fundamental and applied research in the Sun-Earth Connection (SEC) will lay the groundwork for the future:

- To advance space science, we will continue to investigate the basic processes that cause solar variations, as well as their consequences for the solar system.
- To ensure the safety of humans traveling from Earth, we will seek to understand and forecast the space environments with which they must cope.
- To take the first steps toward voyaging to nearby stars, we will carry out robotic exploration of interstellar space beyond the heliosphere.

To meet these objectives, the SEC theme is dedicated to understanding the physical processes that power the Sun and link the Sun and Earth. The basic physics concerns the behavior of primarily electrified material and its interaction with magnetic fields on the Sun, in interplanetary space, at the Earth and planets, and in the local galactic environment.

### What is SECEF?

The Sun-Earth Connection Education Forum (SECEF) is part of NASA's Space Science Education and Public Outreach Program, a partnership between NASA's Goddard Space Flight Center and the University of California, Berkeley's Space Science Laboratory. Our two primary goals are to disseminate educational resources related to the Sun and its connection to Earth and to facilitate the involvement of space scientists in education.

<http://sunearth.ssl.berkeley.edu>  
<http://sunearth.gsfc.nasa.gov>

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A listing of sites that answer some of the most common Sun-Earth Connection questions.

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Website listings for spacecraft and instruments currently studying the Sun-Earth Connection.

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Educational solar sites listed by grade level.

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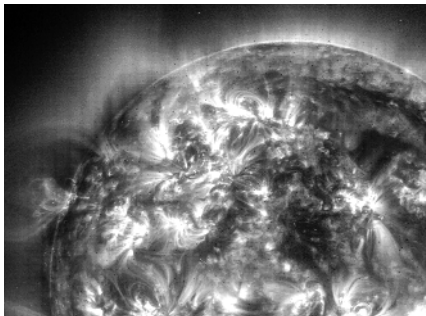
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Sun-Earth Connection terms and their definitions.

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Links to NASA education and public dissemination sites.

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**Solar image** taken by the Extreme Ultraviolet Imaging Telescope aboard the SOHO satellite. Image from the Solar Data Analysis Center at NASA Goddard Space Flight Center. <http://umbra.nascom.nasa.gov/80/sdac.html>

# Common Questions and Answers

Links to answer the most frequently asked questions.

## Where can I find classroom activities about solar storms and the Sun?

<http://istp.gsfc.nasa.gov/istp/outreach>  
<http://sohowww.nascom.nasa.gov/explore/>  
<http://sunearth.ssl.berkeley.edu/>

## Would you like to hear interviews with Sun-Earth Connection scientists?

<http://www.exploratorium.edu/sunspots>

## How can I participate in a weekly live chat with a space scientist?

<http://quest.arc.nasa.gov/sso/chats/sched.html>

## What does the Sun look like today?

<http://umbra.gsfc.nasa.gov/images/latest.html>

## Where can I find out about solar events that my class can participate in?

<http://www.solarevents.org>

## How can I tour the Sun and learn about our nearest star from the inside?

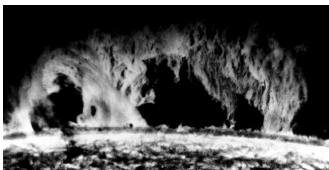
<http://solar.physics.montana.edu/YPOP>

## What is the latest news on Space weather?

<http://www.spaceweather.com>

## Where can I find out about solar flares?

[http://cse.ssl.berkeley.edu/hessi\\_epo/](http://cse.ssl.berkeley.edu/hessi_epo/)

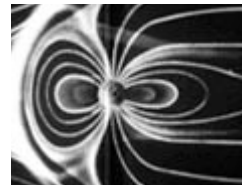


## How do solar storms affect our electric power systems?

<http://www.mpelectric.com/storms/>

## What are auroras?

<http://www.auroras2000.com>



## Would you like to explore the Earth's magnetosphere?

<http://image.gsfc.nasa.gov/poetry>  
<http://www.spo.gsfc.nasa.gov/Education/Intro.html>

## How much do you know about the Sun?

<http://solar-center.stanford.edu>

## Where can I "hear" the Earth's magnetosphere?

<http://www-pw.physics.uiowa.edu/mcgreevy/>



## Experience a total solar eclipse!

<http://www.exploratorium.edu/eclipse>

## How does radiation affect astronauts?

<http://flick.gsfc.nasa.gov>  
<http://see.msfc.nasa.gov>

## Ask a Scientist

<http://image.gsfc.nasa.gov/poetry/ask/askmag.html>  
<http://sohowww.nascom.nasa.gov/explore/drsoho.html>

## New Launches

<http://spacescience.nasa.gov>

## What is Solar Maximum?

<http://www.solarmax2000.com>

Images: (top) Earth's Magnetosphere illustration courtesy of NASA's Sun-Earth Connection.

(middle) Solar eclipse image from Fred Espenak's Eclipse Home page at NASA's Goddard Space Flight Center.  
<http://sunearth.gsfc.nasa.gov/eclipse/eclipse.html>

(bottom) Solar prominence image from Big Bear Solar Observatory  
<http://www.bbso.njit.edu/>