

Breaking News!!!! Our Sun-Yours to Discover

Summary

While viewing and/or listening to the 2009 Sun-Earth Day Webcast, students will learn about the enormous effects that our sun has on our small planet. During the webcast NASA scientists share 5 major discoveries about the sun while students (on the set) monitor 'near real-time' space weather data in preparation for their own space weather report. With this activity your students will learn how to develop and present a news broadcast based on content provided in the Sun-Earth Day 2009 webcast.

About the Webcast:

We worked hard to bring a webcast that is suitable for all ages and all audiences. For each mission and discovery there are great visualizations to keep things exciting! During the webcast, scientists Eric Christian, Nicky Fox, Terry Kucera and Sten Odenwald answer student questions while sharing additional knowledge about the sun-earth system.

A list of the "***The Top Five Solar Discoveries***" video clips that were used during the webcast are listed below:

- **Discovery #5:** The Dynamic Sun
- **Discovery #4:** Seasons of the Sun: The Solar Cycle
- **Discovery #3:** Auroras and Magnetic Reconnection
- **Discovery #2:** A "Squashed" Heliosphere
- **Discovery #1:** Unlocking the Secrets of Space Weather

Objectives:

- Students recognize how to take notes from a web cast.
- Students compile notes to develop a news broadcast about the discoveries of the Sun.

Technology Standard

Technology is essential to science for such purposes as access to outer space and other remote locations, sample collection and treatment, measurement, data collection and storage, computation, and communication of information.

Materials Needed

- One internet connection with access to the 2009 Sun-Earth Day Webcast at: <http://sunearthday.nasa.gov/2009/webcast.php> . If needed, the webcast can be viewed from the website or download for future use.
- Writing supplies (paper, pencils, pens, and/or computers)

Instructions:

1. Take notes while viewing the Sun-Earth Day 2009 webcast. When completed the students can work in groups to compile a 'group set' of notes. (The attached 'outline' can be used as a guide).
2. After they have compiled their notes into a solid outline, they can begin the process of writing a news script containing an introduction, highlights, interview questions, closure, etc
3. In this phase the students should select the 'interviewer' and 'interviewee', giving them fictitious names. These interviews can be creative and fun while still using the information compiled from the web cast. The final report can be presented using the green screen multi-media software that is used for Space Weather Reports. (see <http://sunearthday.nasa.gov/swac>)

[TEACHER'S NOTE]

You may want to divide your students into 5 groups, one for each of the 'Top Five Solar Discoveries' mentioned in the webcast, and follow the instructions provided above. When ready, each group can present a news report on their 'discovery'. In the end, everyone will have a deeper understanding of the discoveries mentioned in the webcast.

[ADDITIONAL RESOURCE]

"*Sun Watchers Through Time*" is an online timeline that you may want to include as part of this activity. It allows your students to step through major solar related discoveries between 3000 BC and 2000 AD.

<http://sunearthday.nasa.gov/2005/multimedia/timeline.htm>

Outline:

- A. Galileo
 - a. Telescope
 - b. Discovery
- B. Hinode Mission
 - a. Goal
 - b. Mysteries of the Sun
- C. Schwabe
 - a. Sunspots
 - b. Solar cycle
- D. SOHO and Stereo
 - a. Observing in different wave lengths
 - b. 3-D views
- E. Connection of the Sun and Earth
 - a. Solar Wind
 - b. Aurora (Northern Lights)
- F. Themis
 - a. Location
 - b. Information
- G. Radiation Storm Probe
 - a. Van Allen Belts
 - b. Importance
- H. TIMED
 - a. Ionosphere
 - b. Heating and cooling cycles
 - c. Importance
- I. Voyager I and II
 - a. Heliosphere-Atmosphere of the sun
 - b. What it looks like
- J. IBEX
 - a. Importance
 - b. Expectations
- K. Space Weather
 - a. Effects for humans
 - b. Magnetic fields
- L. SDO
 - a. New information
 - b. Other side of the Sun
- M. Other facts about the Sun