



# **LIVE FROM THE AURORA**

**2003 EDUCATOR'S GUIDE**

**FEATURING:**

**Student Observation Network (S.O.N.)**

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**We'd like to acknowledge the efforts  
of three teaches who have contributed  
activities:**

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# INTRODUCTION

As with all good research, we will start with a question: *Do visible signs of the Sun-Earth Connection exist?* The inquiry-based activities in this book are designed to encourage students to formulate questions related to the existence of the Sun-Earth Connection.

- What are sunspots?
- What is the solar wind?
- Are there visible signs that the Sun and the Earth are connected?
- What can auroras tell us about the Sun-Earth Connection?

**WARNING!!!** It is never safe to look directly at the Sun because the Sun's rays can damage your eyes. It is safe to study the Sun's surface if you use a telescope to project the Sun's image onto a piece of paper.

## THE STUDENT OBSERVATION NETWORK (ONLINE)

The Student Observation Network is a combination of four separate on-line programs providing students with the necessary tools to observe the dynamic connection between the Sun and the Earth. By using the Student Observation Network along with the activities in this book, students will be able to:

- Safely observe the Sun
- Make use of real-time NASA data
- Collect and share observations with other students around the country
- Make solar predictions
- Examine how the Sun is related to the aurora

S.O.N. URL:

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*<http://sunearth.gsfc.nasa.gov/sunearthday/2003/network.htm>*

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## LIVE FROM THE AURORA: EDUCATOR'S GUIDE

The material in this book is divided into four main content areas, each reflecting a component of the Student Observation Network. All activities are designed to challenge students into further investigating the dynamic nature of the Sun and its connection to the Earth.

The activities included in this educator's guide:

- Reflect each component of the online Student Observation Network.
- Include connections to National Math, Science and Technology standards.
- Encourage participation at all grade levels.
- Allow students to study each content area regardless of location. (Auroral Friends uses real NASA data available online.)
- Provide background for better understanding of the Sun-Earth Connection.

### Main areas of content (Network Component) :

- **Sunspots (Sunspotters)**  
Grade Level: K-2, 3-5, 6-8

- **Radio Waves (Radio JOVE)**  
Grade Level: 6-8, 9-12
- **Magnetism (Magnetometer - MagNet)**  
Grade Level: 9-12
- **Solar Storms and the Aurora (Auroral Friends)**  
Grade Level: 9-12

### Notes:

- The activities in this book can be used independently from the Student Observation Network.
- For additional background resources and activities in all grade levels including teacher-guided and student-directed Web quests, go to:  
*<http://sunearth.gsfc.nasa.gov/sunearthday/2003/network.htm>*

## PASSPORT TO KNOWLEDGE AND NASA SUN-EARTH CONNECTION EDUCATION FORUM PRESENT:

Two spectacular new science specials will debut on participating PBS stations and NASA Television—free for all educational networks, noncommercial cable systems, schools, and science centers and planetariums. They are supported by teacher-tested hands-on activities and Web resources connecting real-world science to the National Science Education Standards.

### Documentary

#### **Auroras: Living With A Star**

Tuesday, February 11, 2003

1:00 p.m.-2:00 p.m. Eastern Time

Auroral Topics Covered: Background Science, Views from Earth and Space, Myths and Legends, Societal Impact.

### Web Cast

#### **Live From the Aurora 2003**

Tuesday, March 18, 2003

1:00 p.m.-2:00 p.m. Eastern Time

