



## Module 4: SDO Exploration Museum

Activity: 3-D Solar Exhibit

### Overview

What is a museum? Have you ever been to a museum? If so, what did you like about visiting a museum? Museums can be boring or exciting depending on how the exhibits are designed and presented. An exhibit is a sensory representation (sight, sound, touch, etc.) or interpretation of a topic that directly communicates its importance to an audience. Great exhibits engage visitors, help them learn new things, and offer them a hands-on experience. Your team will create a 3-D Solar Exhibit, with demonstration or interactive components, which teaches others about the Sun based on your team's investigation of the *SDO Project Suite* Solar Module Activities.

### Team Goals

Now that you have successfully completed one activity from each of the three SDO Solar Modules, your team will work together to:

- Design and create an innovative 3-D Solar Exhibit to educate “visitors” about the Sun and the Solar Dynamics Observatory;
- Apply and analyze the connections among three solar content areas (Structure & Features of the Sun, Electromagnetic Spectrum & Magnetic Fields of the Sun, and Sun-Earth Interactions) within your group's 3-D Solar Exhibit;
- Synthesize a demonstration or interactive component for your team's 3-D Solar Exhibit;
- Self-evaluate your team's 3-D Solar Exhibit as a summative assessment project for the *SDO Project Suite*.

### Materials

- Computer with printer (color optional) and Internet access
- Poster board or cardboard for backboard, cube, or screen exhibit design format
- Markers or colored pencils
- Fine tip black pen (Sharpie)
- Construction paper
- Scissors
- Glue
- Ruler & meter stick
- Pencils
- Images, graphs, data tables, artifacts, etc.
- Any other items and materials your team may need



## Engage & Explore!

### 1. BUILD Knowledge:

#### Review and Reinforce SDO Content

This fourth and final SDO Solar Module is an opportunity for your team to showcase your expertise and share your excitement about SDO and Solar Science. As a team, read the “Mysteries of the Sun” booklet, watch the accompanying videos, plus use any other suitable resources to review and reinforce your knowledge and understanding about the Sun and SDO.

[Mysteries of the Sun Booklet & Videos](#)



### 2. CREATE Resources & CONNECT to the Real World:

#### Develop, Create, and Present a 3-D Solar Exhibit

The “3-D Solar Exhibit Planning Guide & Timeline”, provided at the end of this guide, is set up in a step-by-step sequence to assist your team in completing SDO Module 4. There are a total of four parts comprised of ten steps, which your team will complete to create your 3-D Solar Exhibit.

Each team will plan, build, and host a 3-D Solar Exhibit as part of a whole class SDO Exploration Museum. Your team’s 3-D Solar Exhibit must include written descriptions and examples of the solar module content, images, and artifacts you investigated. As part of your team’s 3-D Solar Exhibit, you must include one demonstration or interactive component from each of Solar Module Activities that you researched and completed. These module artifacts allow your team to share its understanding of SDO and the Sun with museum “visitors” in order to help them learn about Solar Science from your exhibit.

#### **Part 1: Solar Exhibit Planning**

3-D Solar Exhibit Design Worksheet:

##### 1) Identify Completed Solar Module Content Activities

Indicate the Solar Module Activity (A, B, or C) that your team completed from each of the Solar Modules Topics (1, 2, and 3).



## 2) Select Solar Exhibit Design Format

Deciding on an exhibit design layout is the first important step for your team in planning your 3-D Solar Exhibit. There are three exhibit design layouts to choose from - backboard, cube, and screen formats. As a team, review the three exhibit design layouts and then select one format to develop and display your 3-D Solar Exhibit information and artifacts. Don't forget to include your own creativity in designing, developing, and presenting your exhibit!

## **Part 2: Solar Exhibit Preparation**

### 3-D Solar Exhibit Preparation Worksheet

Carefully follow and complete the instructions provided in the "3-D Solar Exhibit Preparation" worksheet for the exhibit design layout that your team selected.

## 3) Write Draft - Content, Image & Artifact Descriptions

- a. On the worksheet, teams write the name of the "Solar Module 1 Topic" and the "Solar Module 1 Activity" your team completed.
- b. As a team, review the "Content", "Image", and "Artifact" description sections for the solar module activity. Discuss ideas and agree on responses as a group for each section.
- c. As a team, assign a student leader to complete the "Content" section, a student leader to complete the "Image" section, and a student leader to complete the "Artifact" section of "Side A" of your group's exhibit. Each section leader is responsible for typing or writing the draft, which the group contributed to and agreed upon, for their assigned section. Each team member must be a section leader at least once and no more than two team members may act as section co-leaders.
- d. In order to prepare for presenting your exhibit as a team to "visitors", all team members share the task of discussing and writing the draft "Verbal summary" for the Solar Module.
- e. Teams repeat the above steps for Solar Modules 2 and 3 sections, plus any additional SDO topics included as part of their 3-D Solar Exhibit.

## 4) Cite Sources - Content, Images & Artifacts

Acknowledging sources of information is part of scientific communication.

Use [EasyBib](http://www.easybib.com) (<http://www.easybib.com>) for appropriate citation format for each topic, image, and artifact source in your team's 3-D Solar Exhibit.

## 5) Type Final Copy - Content, Image & Artifact Descriptions

Developing keyboard skills is an important part of technology.

- a. As a team, edit your "3-D Solar Exhibit Preparation" worksheet before typing each exhibit section. Save your work!
- b. Section leaders are responsible for typing and printing their "Content", "Image", and "Artifact" sections. All team members share the job of editing, typing, and printing the "Verbal Summary" sections. Save your work!



- 6) Prepare Images & Artifacts for Exhibit
- “A picture is worth a 1000 words” and “people learn by doing” are phrases you may be familiar with. One objective of your team’s 3-D Solar Exhibit is to communicate your knowledge of SDO using imagery and action to teach your “visitors”. Select three images and one interactive artifact for each of the three Solar Module Activities. Ensure your images are adequately sized and of good resolution, ideally in color, and that your selected artifacts are functional.

### **Part 3: Exhibit Creation & Evaluation**

- 7) Create 3-D Solar Exhibit
- 3-D Solar Exhibit Checklist:
- A museum is a collection of many individual exhibits. Your team will work together to construct their 3-D Solar Exhibit, according to the details of your chosen design layout instructions and available materials. The “3-D Solar Exhibit Checklist” provides guidance on the required components for your exhibit. Add creative elements that show your team’s expertise and involve “visitors” in learning about the Sun through the SDO Module Activities your group investigated.
- 8) Content & Exhibit Rubric & Group Self-Evaluation Rubric
- Your teacher will complete a “Content & Exhibit Rubric” to assess your team’s SDO Module Activities and 3-D Solar Exhibit. Each team member independently completes a “Group Self-Evaluation Rubric” to assess your team’s SDO project from start to finish.

### **Part 4: SDO Exploration Museum**

#### Museum Exhibit Event

- 9) Attend Class SDO Exploration Museum Event
- Your team sets up their 3-D Solar Exhibits as part of a whole class SDO Exploration Museum.
  - Station one or two members at your team’s exhibit to act as curators while the remaining team members visit other groups’ solar exhibits.
  - Ensure that each team member spends an equivalent amount of time hosting your team’s exhibit as well as visiting all other group exhibits.
  - Have fun sharing and learning about SDO and Solar Science!
- 10) Congratulations, SDO Module 4 is finished!
- The Solar Science project-based learning event is successfully completed.



Names: \_\_\_\_\_ Date: \_\_\_\_\_

### Module 4: SDO Exploration Museum

Activity: 3-D Solar Exhibit Planning Guide & Timeline

#### **Part 1: Solar Exhibit Planning**

3-D Solar Exhibit Design Worksheet

Due Dates:

- \_\_\_\_\_ 1) Identify Completed Solar Module Content Activities Complete:
- \_\_\_\_\_ 2) Select Solar Exhibit Design Format Complete:

#### **Part 2: Solar Exhibit Preparation**

3-D Solar Exhibit Preparation Worksheet

Due Dates:

- \_\_\_\_\_ 3) Write Draft - Content, Image & Artifact Descriptions Complete:
- \_\_\_\_\_ 4) Cite Sources - Content, Images & Artifacts Complete:
- \_\_\_\_\_ 5) Type Final Copy - Content, Image & Artifact Descriptions Complete:
- \_\_\_\_\_ 6) Prepare Images & Artifacts for Exhibit Complete:

#### **Part 3: Solar Exhibit Creation & Evaluation**

3-D Solar Exhibit Checklist & Rubrics

Due Dates:

- \_\_\_\_\_ 7) Create 3-D Solar Exhibit (following exhibit guidelines) Complete:
- \_\_\_\_\_ 8) Content & Exhibit Rubric and Group Self-Evaluation Rubric Complete:

#### **Part 4: SDO Exploration Museum**

Museum Exhibit Event

Due Dates:

- \_\_\_\_\_ 9) Attend Class SDO Exploration Museum Event Complete:
- \_\_\_\_\_ 10) Congratulations, SDO Module 4 is finished! Complete: