

**“Live from McDonald Observatory” Videoconference  
Student and small group activity sheet**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

***Welcome to the videoconference!***

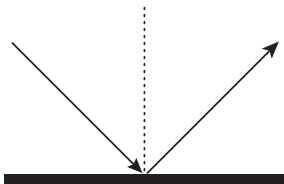
The University of Texas McDonald Observatory is a place where astronomers use state of the art technology, engineering expertise, and the scientific method to answer fundamental questions about the universe we live in. This activity sheet is completed individually and in a small discussion group. We hope you enjoy your videoconference today!

\*\*\*\*\*Please wait until you are prompted to begin\*\*\*\*\*

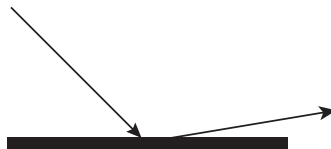
***Section 1: Visiting the Otto Struve Telescope: small group discussion***

The rays with arrows illustrate beams of light. What figure(s) illustrate the Law of Reflection?

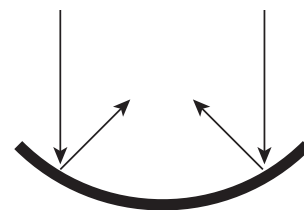
**Figure A**  
A flat mirror



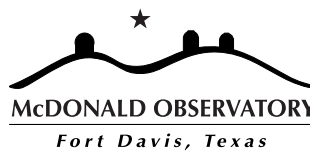
**Figure B**  
A flat mirror



**Figure C**  
A curved mirror



- Figure A
- Figure B
- Figure C



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***Section 2: Investigating our star the Sun: make your own drawing***

During this section of the videoconference you will be observing our Sun and its features. Look closely at the images on your screen, and make your own drawing.

**Sketch the Sun**

Draw a close-up feature you see on the sun, like a sunspot, prominence, or flare:

When you complete your drawing, answer the following questions:

Select A or B:

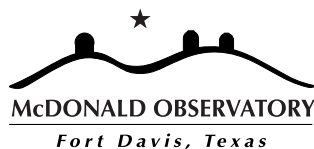
When matter becomes a plasma, does it make a chemical or physical change?

A.  Chemical change                      B.  Physical change

Select one or more that apply:

In the Sun, energy moves in the following ways:

A.  Convection                      B.  Conduction                      C.  Radiation



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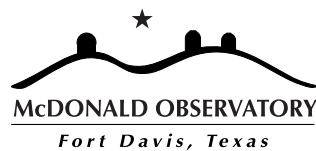
*A roll-off roof observatory building gives an all sky view.*



*Inside are telescopes, solar filters, cameras, & computers.*

**Equipment and hardware used in solar observations:**

- Telescopes: Two 76-mm (3-inch) TeleVue refractors.  
Celestron 35.56 cm (14-inch) reflector
- Cameras: Three Adirondack Video Astronomy Stellacams
- Solar filters: DayStar H-Alpha (656-nm) wavelength filter  
Neutral Density White Light Filter.
- Mounting: Software Bisque ME Robotic Paramount  
(Telescopes and cameras are remote operated  
from videoconference studio)
- Computer: HP Pavilion Windows XP Pro



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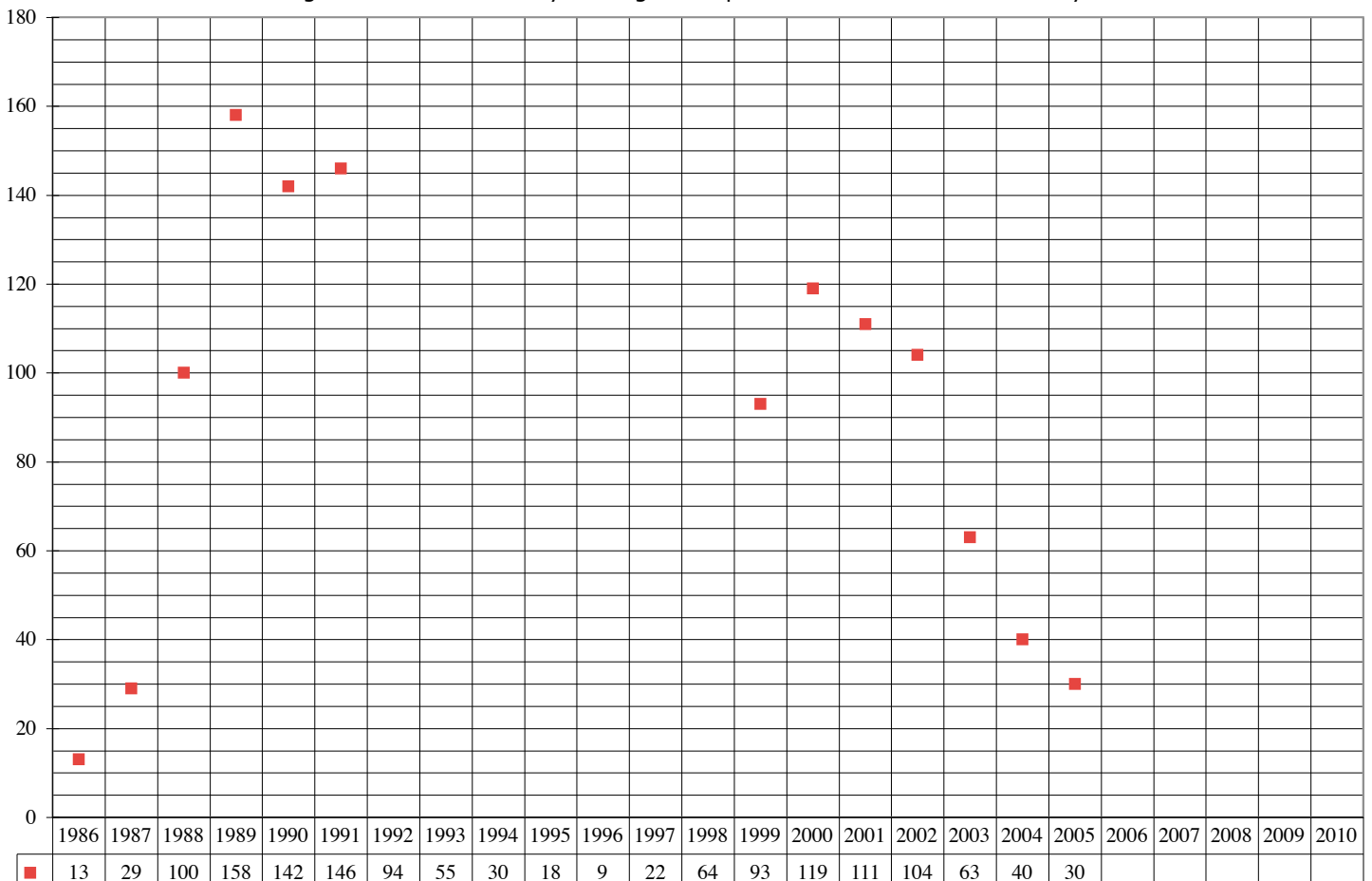
### Section 3: Sunspot Challenge: small group discussion

The following page has an incomplete graph of Yearly Average Sunspot Numbers. Your small group must:

- 1) Use the data table below the chart to plot the missing data points for 1992-1998.
- 2) Analyze the data for a trend, or pattern.
- 3) Predict the Yearly Average Sunspot Number for the next 5 years. Plot your predicted data!

These are Yearly Average Sunspot Numbers from 1986-2010

Use the data table below the graph to enter data points for years 1992-1998, and look for a trend. Then predict the general trend of Yearly Average Sunspot Numbers for the next five years.



This scientific data was collected by the Solar Influences Data Analysis Center, World Data Center for the sunspot index, Royal Observatory of Belgium.

