

ACTIVITY - STUDENT SOLAR OBSERVATIONS

OBJECTIVE

In this activity, students gather, record, and analyze their own data using the Coronado Personal Solar Telescope.

MATERIALS

- Coronado Personal Solar Telescope
- Observation Data Sheets (included)
- Camera or cell phone for taking pictures (optional)
- Internet access (to verify observations)
- Pen or pencil

SAFETY WARNING

Never look at the Sun through an ordinary telescope without a solar filter. This can lead to severe eye damage and blindness. Only specialized SOLAR telescopes/filters should be used to view the Sun.

BACKGROUND

NEVER TRY TO OBSERVE THE SUN WITHOUT EYE PROTECTION, IT CAN LEAD TO BLINDNESS!

The Sun radiates so much light that in order to observe it safely, we must use telescopes with special filters that only let some of the light through. The filter you will be using is called a "Hydrogen-alpha" filter, which only lets wavelengths of approximately 656nm (red light) through. This filter should allow you to see solar prominences, filaments, flares, and even sunspots!

In the activity, you will:

1. Observe the Sun using a Coronado Personal Solar Telescope, which uses an H-alpha filter.
2. Sketch images of the Sun either daily, weekly, or monthly.
3. Demonstrate that the Sun rotates, by recording sunspot positions over time.
4. Record the number of sunspots visible on the Sun on any given day.

Telescope Make: Meade Coronado

Telescope Model: Personal Solar Telescope (PST)

Aperture Size: 40mm

Focal Length: 400mm

DIRECTIONS

1. Determine where the Sun rises. Find a reference point where you will know to look when trying to find the Sun on its path. What times did the Sun rise and set on the day of your observation?
2. Observe through a solar telescope
3. How many sunspots can you see? What are their locations?
4. How many filaments can you see? What are their locations?
5. How many prominences can you see? What are their locations?
6. List some differences between what you observed yesterday and today. Sketch what you see.
7. Verify your observations. Visit National Solar Observatory's H-Alpha Monitor:

halpha.nso.edu
8. Write a quick journal entry about the day's observations.
 - Did you notice anything different or special?
 - What was your favorite observation?
 - Make predictions about what you'll see the next day, week, year...
9. Record your responses on the observation data sheets provided.

STUDENT DATA SHEET

Date: _____

Time: _____

Scientist (student name): _____

Weather conditions _____

Sky conditions _____

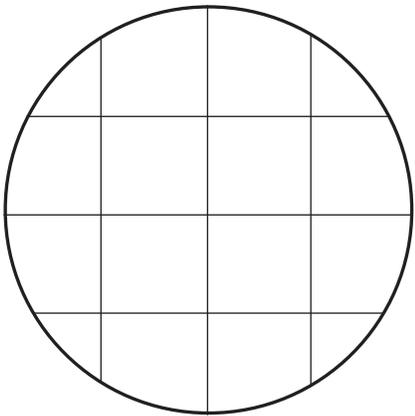
Telescope make & model:

Aperture size: _____

Focal Length: _____

Observe the Sun:

Carefully sketch what you observe through the telescope. Draw as many features as you can.



of Sunspots visible: _____

of Filaments visible: _____

of Prominences visible: _____

Written description of observations:

(colors, sizes, and locations of features) _____

Verify your observations with the following websites:

<http://halpha.nso.edu>

www.helioviewer.org

Does what you observed through the telescope match what you found online? Explain.

Additional observations from the online resources:

Journal Entry:

