

# Solar Astronomy Outreach

-a FREE educational program for grades 4 and above provided by **Timmy Telescope Solar Astronomy Outreach**,

## Observe the Sun

Observe the sun safely with specially filtered telescopes in several different wavelengths. Alternative viewing methods include solar viewers, solar viewing glasses, and video monitor.



The camera acts as your eye and projects the image onto a video monitor.

# STEM Activities

We offer a variety of STEM related activities tailored to the age level of the group. For more information visit our website: [www.TimmyTelescope.com](http://www.TimmyTelescope.com)

## UV: Health Effects

Students construct UV bead bracelets to raise their awareness of solar radiation. They can be used at home for further experiments with sun screens and sunglasses.



Light sensitive beads change color when exposed to UV light between 360-300 nm.

## SunWise®: Health Effects

Informal educational cards highlight the environmental impact of solar radiation and energy.



LearningabouttheEnergyChain



EPA's SunWise® Program shows how animals protect themselves in the Sun.

## Ultraviolet Light

Students can observe UV light with a Calcium-K line filtered telescope.



## The Electromagnetic Spectrum

Using a spectrometer to identify the solar spectrum.



# STEM Activities



For groups of 8-30. Each person is a planet, moon or asteroid.

## Solar System

Students learn about the solar system and construct a scaled distance model within 55' or larger area. Older students can mathematically derive the scaled distances between the planets.

## Importance of Color

Informal and directed activities teach about the electro-magnetic spectrum, the concept of albedo, and energy transformations.



Which color is hotter? Visitors use an IR Sensor to determine the temperature of different colors.

## Current Information



## Sundials

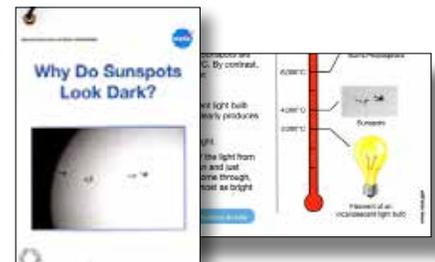
Students construct a sundial and learn how to use the sun's shadow and earth's rotation to tell relative time.



Visitors browse the Informational boards to better understand what they observed through the telescope.

## Our Magnetic Sun Cards

Informal Q & A cards pose popular questions about the sun. QR codes lead to more information about the topic.



# Solar Astronomy Outreach

## Ask the Expert

Knowledgeable science educators explain basic solar physics, solar cycles, and the solar system while engaging visitors and providing current research findings.



## What does a basic Outreach Event include?

- 1-2 hours of observing with solar filtered telescope
- Educational Poster Boards with current scientific information
- SunWise® Health activities
- Learn about light and the electromagnetic spectrum
- Ask the Expert-Q & A with a solar astronomy educator

Organizations may be responsible for providing supplies and additional help if sundials and beads are added to the event.

## More about us

**Timmy Telescope Solar Astronomy Outreach** is the New Mexico chapter of the *Charlie Bates Solar Astronomy Project (CBSAP)*, an international science outreach non-profit organization. We coordinate solar astronomy outreach with the *New Mexico Science Teachers Association (NMSTA)* and the *Albuquerque Astronomical Society (TAAS)*. CBSAP is the world's highest volume solar astronomy outreach program and has received numerous achievement awards.

### To schedule a Solar Astronomy Outreach:

Email Roger W. Kennedy  
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## For more information

visit us on the web: [www.TimmyTelescope.com](http://www.TimmyTelescope.com)

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