



Joan and John Evans Legacy Sundial

Fun and Educational Links for Families and Educators

Astronomy is FUN! It's all about observation and discovery. It can be enjoyed on many levels, from noting simple shadow observations to exploring deep space. Astronomy connects us to many facets of our world and to many skill-sets and areas of study including: wilderness survival, orienteering, navigation, geography, history, ancient cultures, ecology and green architecture, space exploration, math, physics, and more. We encourage you to explore the links below for fun activities for all ages, and to explore your local library and other world wide web sites for further discoveries.

GEOGRAPHY & NAVIGATION: UNDERSTANDING LATITUDE AND LONGITUDE

Latitude: This short video explains latitude and how it determines the construction of a sundial:

<https://www.youtube.com/watch?v=WXiakqRWcHc>

Longitude: This video explains longitude and how it affects the sundial time:

<https://www.youtube.com/watch?v=b7yoXhbQQ3Y>

SOLAR ENERGY & GREEN ARCHITECTURE: This 10 min video offers a clear explanation of how to use the seasonal changes in the sun's path across the sky to gain efficient use of solar energy.

[\(446\) Intro to Solar Orientation \[Solar Schoolhouse\] - YouTube](#)

INSTRUCTIONS FOR MAKING SUNDIALS

Students as young as third grade can make this equatorial sundial:

<https://stardate.org/sites/default/files/pdfs/teachers/EquatorialSundial.pdf>

Middle school students or older can use this graphical method to make a horizontal sundial:

<https://sundials.org/index.php/teachers-corner/sundial-construction/154-banneker-drawing-a-dial5>

SKY & SPACE: IMAGES AND VIEWING

NASA's Astronomy Picture of the Day: Discover the cosmos! <https://apod.nasa.gov>

Each day a different image of our fascinating universe is featured, along with a brief explanation by a professional astronomer. Click on the "education" link at the bottom for resources or click their "archive" link and search for a given topic of interest. (For instance, try key words solstice, equinox, analemma)

An online planetarium or sky maps: www.stellarium-web.org

The site has many options. It will start with your current location and time. You can change it to any time and place. You can speed up the time to watch the motions over time. Or you can freeze the time and change the date to see how positions change from day to day. You can cut out atmospheric scattering of light to see where the stars are during the daytime and how the sun's position changes with respect to the stars. Play with it!



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The National Oceanic and Atmospheric Administration posts current weather satellite photos and videos:

<https://www.star.nesdis.noaa.gov/goes/>

If you click on the full hemisphere video, you can watch a time lapse of the previous three hours. As well as watching how the weather patterns move across the globe, you can also see the sunlight moving as the earth rotates. We recommend the option “GOES-East” → “Full Disk” → “Geo Color” → “Animation Loops”

Space Weather: The site <https://www.spaceweather.com/> deals with upper atmosphere activity, including auroras, meteor showers, noctilucent clouds, sprites, and cosmic rays in the stratosphere. It also shows sunspots and solar flare activity. You can find spectacular photos in the photo gallery.

Night Sky Images: For the best in astrophotography from all over the world, visit “The World at Night”:

<https://twanight.org>

HISTORY AND ANCIENT CULTURES: The North American Sundial Society (NASS) offers interesting information about ancient sundials from around the world.

[Ancient Sundials](#)

[Armenian Sundials - Necessity Becomes History](#)

[Virtual Tour of Jantar Mantar Solar Observatory \(sundials.org\)](#)

[Frederick Douglass Sundial \(sundials.org\)](#)

Videos regarding ancient sundials: [Ancient Astronomers - Ancient Astronomers \(sundials.org\)](#)

Videos regarding historic sundials: [Historic Sundials - Historic Sundials](#)

TYPES OF SUNDIALS:

[Shadows of Time - Roger Dignard - Shadows of Time \(sundials.org\)](#)