

astronomical calendar

BUHL PLANETARIUM & OBSERVATORY

summer
2017



JUNE

1	Thu	☾	First Quarter Moon – 8:42 am
3	Sat		Jupiter 2 degrees below Moon (Look south in the pm)
3	Sat		Venus at greatest elongation (Look east at dawn)
9	Fri	☾	Full Moon “Strawberry Moon” – 9:09 am
9	Fri		Saturn 2 degrees right of Moon (look southeast in the pm)
15	Thu		Saturn at opposition (Look east in the pm)
17	Sat	☾	Last Quarter Moon – 7:32 am
20	Tue		Venus 5 degrees left of Crescent Moon (Look east at dawn)
21	Wed		Summer Solstice – 12:24 am
23	Fri	☾	New Moon – 10:30 pm
30	Fri	☾	First Quarter Moon – 8:51 pm



JULY

1	Sat		Jupiter 5 degrees to right of Moon (Look southwest in the pm)
3	Mon		Earth at Aphelion (farthest from the Sun, about 94,505,900 miles)
6	Thu		Saturn 2 degrees below Moon (look south in the pm)
9	Sun	☾	Full Moon “Buck Moon” – 12:06 am
16	Sun	☾	Last Quarter Moon – 3:25 pm
20	Thu		Venus 2 degrees above Crescent Moon (Look east at dawn)
23	Sun	☾	New Moon – 5:45 am
28	Fri		Jupiter 2 degrees below Crescent Moon (Look west-southwest in the pm)
29	Sat		Delta Aquarids Meteor Shower (Overnight until dawn on July 30)
29	Sat		Mercury at greatest elongation (Look west after sunset)
30	Sun	☾	First Quarter Moon – 11:23 am



AUGUST

2	Wed		Saturn 3 degrees below Moon (Look south in the pm)
7	Mon	☾	Full Moon “Sturgeon Moon” – 2:10 pm
12	Sat		Perseid Meteor Shower (Overnight until dawn on Aug. 13)
14	Mon	☾	Last Quarter Moon – 9:14 pm
19	Sat		Venus 4 degrees above Crescent Moon (Look east at dawn)
21	Mon	☾	New Moon – 2:30 pm
21	Mon		Partial Solar Eclipse (1:10 – 3:55 pm)
25	Fri		Jupiter 4 degrees below Crescent Moon (Look west after sunset)
29	Tue	☾	First Quarter Moon – 4:12 am
30	Wed		Saturn 4 degrees below Moon (Look south in the pm)

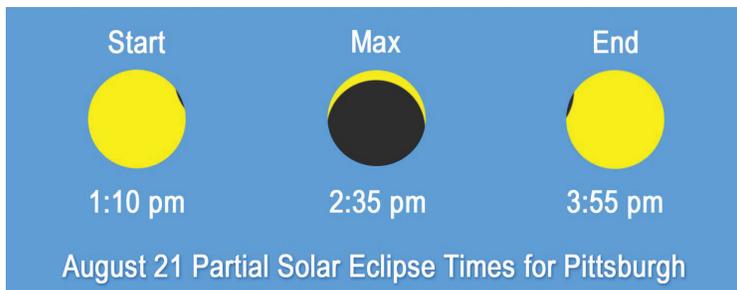


Join stargazers rain or shine for a tour of the night sky!

\$4 for non-members / \$2 for members and as an add-on to general admission or Omnimax show
For dates and details visit CarnegieScienceCenter.org/planetarium

Summer Planet Visibilities

June	Morning:	Venus (E)
	Evening:	Mars early (NW), Jupiter (SW) and Saturn (SE)
July	Morning:	Venus (E)
	Evening:	Mercury (W), Jupiter (SW) and Saturn (SSE)
August	Morning:	Venus (E)
	Evening:	Jupiter (WSW) and Saturn (S)



Nearby Locations to See the August 21 Total Solar Eclipse

Viewing a total solar eclipse is an experience that you will remember for the rest of your life. Only totality reveals the true celestial spectacle of the Sun's vibrant corona surrounding the eclipsed disk of the Sun. At the magical moment of totality, winds will pick up and temperatures drop. Bright stars and planets will pop out of nowhere as the sky darkens. If you would like to experience the goosebumps and intense emotions of a total solar eclipse, then think about traveling to a location along the path of totality.

There are many excellent places to view the total eclipse within 500 miles and 8 hours of Western Pennsylvania. South Carolina will be a significant destination for the eclipse. It will be the nearest location within the path of totality for at least 100 million Americans along the east coast. The state capital of Columbia is a sizable city with a long duration of totality, about 2 minutes and 30 seconds. The city of Greenville will also experience totality for 2 minutes and 11 seconds and Awendaw, near the coast, 2 minutes and 33 seconds. Tennessee is another prime area for viewing the eclipse. Nashville will be treated to 1 minute and 57 seconds of totality. Nearby Gallatin will get 2 minutes and 40 seconds of totality and Lebanon 2 minutes and 37 seconds. The closer you are near the center of the Moon's shadow, the longer totality lasts.

Astronomical Fact

The last total solar eclipse over the US mainland occurred in 1979. The last coast-to-coast total eclipse was 1918. The Aug. 21 total solar eclipse is the first to travel only through the continental United States and no other country since our nation's founding in 1776.

The Great American Solar Eclipse

The first total solar eclipse over the U.S. mainland in 38 years occurs on Monday, Aug. 21. The Moon's shadow will darken skies on approximately a 70-mile-wide path from Oregon to South Carolina. Since Western Pennsylvania and the tri-state region are not in the path of totality, this event will be a partial eclipse in our region. Because the Moon will cover a large portion of the Sun that afternoon, this event will still be a spectacular sight for skywatchers.

A solar eclipse occurs at New Moon when the Moon passes directly in front of the Sun and the Moon's shadow falls on our planet. The Moon's shadow has two parts, a fainter outer shadow called the penumbra and a dark inner shadow called the umbra. When the Moon's penumbral shadow falls on the Earth, the eclipse will be partial and only a fraction of the Sun's bright surface will hide behind the Moon. A total solar eclipse is only visible within the umbral shadow.

The partial eclipse starts here in Pittsburgh at 1:10 pm. when the sun is almost directly overhead. Maximum eclipse occurs 85 minutes later at 2:35 pm. The partial eclipse ends at 3:55 pm. Look for the unusual nature of shadows that occur during the partial eclipse.

Staring at the Sun with the unaided eye can cause eye damage. Even a brief glimpse of the Sun through unfiltered telescopes or binoculars will blind you. **Always use proper filters or safe solar projection techniques.**

SAFETY FIRST!

Eye safety should be a top priority when observing a solar eclipse. You should never look directly at the Sun without proper eye protection.

Never look at the Sun through a telescope without a solar filter on the large end of the scope and never use small solar filters that attach to the eyepiece. An unprotected look of the Sun through a camera's viewfinder, or a telescope or binoculars can cause permanent eye damage.

- Do not use sunglasses; they don't protect your eyes from the damaging rays of the Sun.
- Do use a pair of inexpensive "eclipse glasses." They have special safety filters that permit safe viewing. You can buy "eclipse glasses" at the Science Center's XPLORE Store.
- Do use number 14 welder's glass. It also gives your eyes good protection.
- Do not view through any welding glass if you can see the surrounding landscape or don't know its shade number.
- Do use safe indirect ways for observing the Sun, such as projecting the image or a pinhole projector.
- Do project the image of the Sun onto a white surface with a telescope or binoculars.
- If projecting the image, do keep your finder scope capped if you are using a telescope.
- If projecting the image, do keep the cover on one of the two tubes if you are using binoculars.

Do not let these warnings scare you away from witnessing this celestial spectacle. For more information on the August 21 eclipse log on to <https://eclipse2017.nasa.gov/>