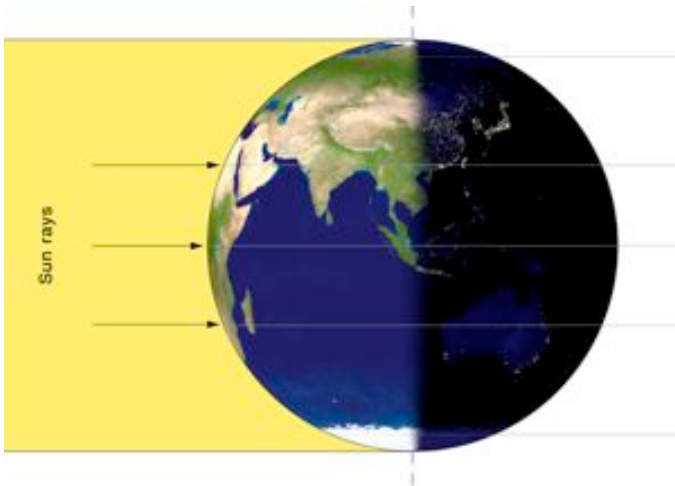




Posted Mar 20, 2011

[Everything you need to know: Vernal or spring equinox 2011](#)



In 2011, the vernal or spring equinox comes on March 20 at 23:21 UTC. To understand what happens on this day, think of Earth in orbit around the sun.

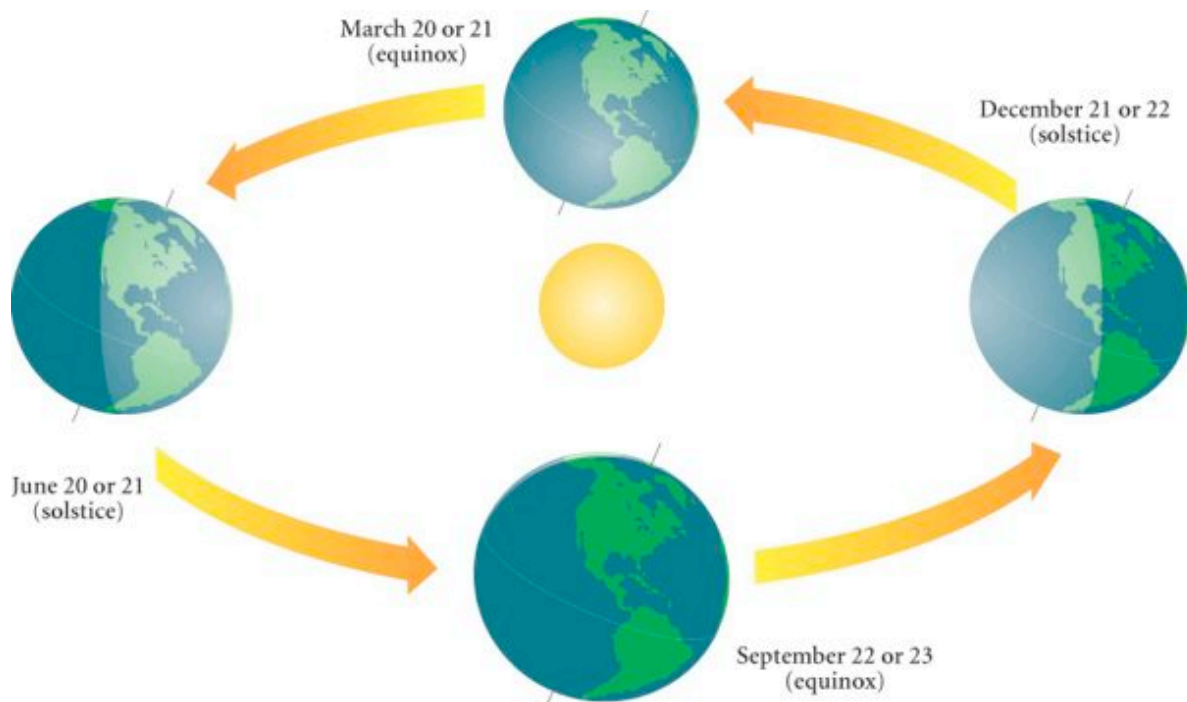
The March equinox signals the beginning of spring in the northern hemisphere and autumn in the southern hemisphere. It marks that special moment when the sun crosses the celestial equator going from south to north.

This equinox comes on March 20, 2011 at 23:21 Universal Time, or 6:21 p.m. Central Daylight Time for us in the central U.S.

Looking for information on the supermoon? [Look here.](#)

The sun is rising earlier now, and nightfall comes later. Plants are sprouting. Winds are softening. For us in the northern hemisphere, people are enjoying the warmer days of spring. South of the equator, autumn begins.

What is an equinox?



The equinox represents a hallmark in Earth's orbit, but it's also an event that happens on the imaginary dome of Earth's sky. The imaginary celestial equator is a great circle dividing the imaginary celestial sphere into its northern and southern hemispheres. The celestial equator wraps the sky directly above Earth's equator, and at the equinox today, the sun crosses the celestial equator, to enter the sky's northern hemisphere.

Our ancestors didn't understand the equinoxes and solstices as events that occur in the course of Earth's yearly orbit around the sun. But they surely marked today as being midway between the sun's lowest path across the sky in winter and highest path across the sky in summer.

Today, we know each equinox and solstice is an astronomical event, caused by Earth's tilt on its axis and ceaseless orbit around the sun.

Because Earth doesn't orbit upright, but is instead tilted on its axis by 23-and-a-half degrees, Earth's northern and southern hemispheres trade places in receiving the sun's light and warmth most directly. We have an equinox twice a year – spring and fall – when the tilt of the Earth's axis and Earth's orbit around the sun combine in such a way that the axis is inclined neither away from nor toward the sun.

Earth's two hemispheres are receiving the sun's rays equally now. Night and day are approximately equal in length. The name 'equinox' comes from the Latin *aequus* (equal) and *nox* (night).

But, since Earth never stops moving around the sun, these days of equal sunlight and night will change quickly.

Where should I look to see signs of the equinox in nature?

The knowledge that spring is here – and summer is coming – is everywhere now, on the northern half of Earth's globe.

If you live in the northern hemisphere, you've likely been noticing the earlier dawns and later sunsets for some weeks now.

Also notice the arc of the sun across the sky each day. You'll find it's shifting toward the north. Birds and butterflies are migrating back northward, too, along with the path of the sun.

The longer days bring with them warmer weather. People are leaving their winter coats at home. Trees are budding, and plants are beginning a new cycle of growth. In many places, spring flowers are beginning to bloom.

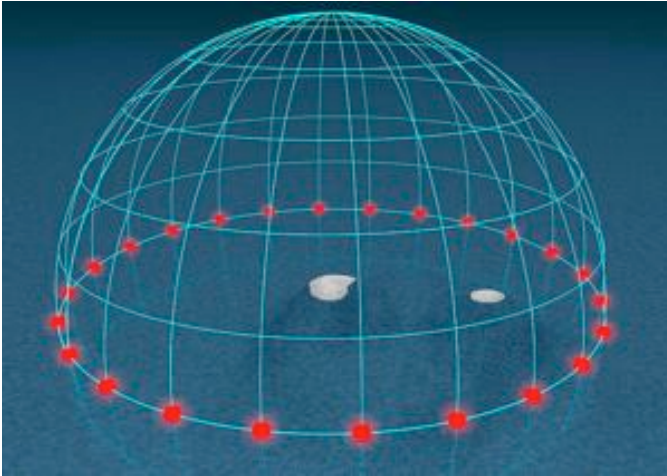
Does the sun rise due east and set due west at the equinox?

Yes, it does. And that's true no matter where you live on Earth, because we all see the same sky.



Earth, as seen from the sun, at instant of March equinox (2011 March 20 at 23:21 Universal Time)

No matter where you are on Earth, you have a due east and due west point on your horizon. That point marks the intersection of your horizon with the celestial equator – the imaginary line above the true equator of the Earth.



At the equinoxes, the sun appears overhead at noon as seen from Earth's equator, as the illustration at right shows. This illustration (which is by [Tau'olunga](#)) shows the sun's location on the celestial equator, every hour, on the day of the equinox.

That's why the sun rises due east and sets due west for all of us. The sun is on the celestial equator, and the celestial equator intersects all of our horizons at points due east and due west.

This fact makes the day of an equinox a good day for finding due east and due west from your yard or other favorite site for watching the sky. Just go outside around sunset or sunrise and notice the location of the sun on the horizon with respect to familiar landmarks.

If you do this, you'll be able to use those landmarks to find those cardinal directions in the weeks and months ahead, long after Earth has moved on in its orbit around the sun, carrying the sunrise and sunset points northward.

So enjoy the 2011 spring equinox on March 20 – an event that happens on our sky's dome – and a seasonal marker in Earth's orbit around the sun!

By [Deborah Byrd](#)