National

The Natural Year™ - 2008

Circular Almanac

How Our Environment Changes as the Year Passes

Showing Cycles, Patterns, and Interrelationships

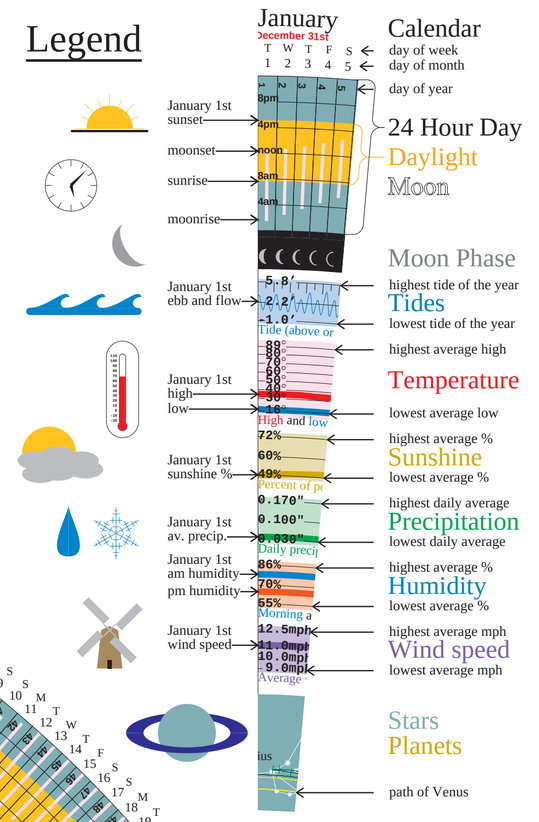
How to Use the Circular Almanac

• The chart graphically shows yearly data for a variety of natural phenomena, with the graph wrapped in a clockwise circle corresponding to Earth's orbit around the sun. • The Legend is a section from the top center of the chart with labels showing the different items displayed. • To see the data for any day, find the day on the outside of the circle, then read inwards toward the center. For example, on January 1st, at the top of the chart, high temperatures are near the lowest of the year, while on July 1st, at the bottom of the chart, they are nearing their maximums. • Also, the 24 Hour Day band shows the day passing outward from midnight on the inner edge of the band, through noon in the center of the band, to midnight again on the outer edge. Thus the yellow band shows daylight, with sunrise on the inner edge through sunset on the outer edge. Note how much narrower the daylight band is in the winter than in the summer. • The pink bars in each day show when the Moon is visible in the sky. Thus on January 22nd, 2008, there is a full Moon because the Moon is rising when the sun sets, while on January 8th there is a new Moon because the Moon rises and sets with the sun. • The Moon Phase and Tide bands, inward from the 24 Hour Day band, show how the tides are correlated with the phases of the Moon. • In 365 days the Earth does not make a full circle around the sun, and so there is a small gap at the top of the circle between the end of December and the start of January. This is why we need a leap year every 4 years. In leap years the Earth makes slightly more than a full orbit, and by the end of the year has passed the starting point. 2008 is a leap year, but we've omitted the 366th day, December 31, to keep it from running over onto January 1st. • Visit www.naturalyear.com, for more information.

About This Edition

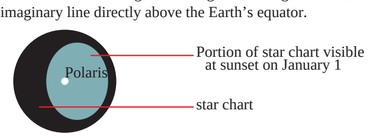
• This National 2008 Edition uses sun and moon rise and set times, as well as weather data, for Kansas City, Missouri. Tide data is for Atlantic City, New Jersey. This shows general patterns and ranges that are applicable to much of the U.S.A. • To get precise data for your specific location, visit some of the links mentioned in www.naturalyear.com.

Legend



Stars

• The star chart shows the brighter stars visible in the northern hemisphere. Any of these can be seen at some time of year, but only a portion of them can be seen at any one time. The diagram below shows the approximate portion that can be seen at one time. • The stars are oriented with the calendar scale so that you can tell approximately when they rise and set at any time of the year. For example, let's look at January, shown at the top of the chart. In the top of the star chart we see the constellation Sagittarius. The sun is 'in' Sagittarius in January, meaning that the sun is between Earth and Sagittarius. When this happens, Sagittarius rises and sets with the sun and we don't see it in the night sky. • Near the bottom of the star chart we find Gemini. Since Gemini is opposite Sagittarius, it rises when Sagittarius sets, and vice versa. Thus in January Gemini rises around sunset and is visible in the sky all night, while Capricorn sets soon after the sun, followed by Aquarius. • As the night passes, the stars pass from east to west. To follow this in the star chart, imagine the 'visible' region in the diagram rotating clockwise, about as fast as the hour hand of a clock. • The innermost edge of the degree markings in the star chart are on the celestial equator, an imaginary line directly above the Earth's equator.



Weather

• The scale for all of the weather data extends from the lowest value of the year to the highest value. This way you can see when the extremes occur even without knowing the exact values. The weather data is 30-year averages, fitted to a smooth curve. • The amount of sunlight is the main cause of the changing of the seasons. Not only does the duration of daylight increase in the winter and spring, as shown in the 24 Hour Day band, but also the sun is higher in the sky and so is more intense. • High temperatures and low temperatures follow this rise and fall, somewhat delayed as the effect of the increasing sunlight builds strength. • Percentage of possible sunshine shows the effect of clouds and haze preventing the sunshine from reaching the surface of the Earth. It is adjusted for the length of day so that a completely sunny day is 100 percent regardless of how long the daylight period is. • Precipitation includes rain and snow, and follows a more complicated rhythm than temperature. • Morning relative humidity and afternoon relative humidity are both shown. As temperatures rise during the day, relative humidity usually drops. • Wind speed is usually lowest during the summer months. • The ebb and flow of the tides is at its most extreme during the full Moon and the new Moon, when the Earth, sun and Moon are lined up with each other. The outer scale on the tide grid lines shows day and half-day tick marks. Note: the tide values are not to be used for navigation.

Planets

• A planet's position among the stars changes throughout the year. The color-coded lines for Venus, Mars, Jupiter, and Saturn show the positions of the planets as they move. The letters along the line represent the month in which it is in that position. For example, find Mars at the beginning of its path in the star chart, showing the position on January 1st. As you follow along the line in a clockwise direction, you are tracing the positions Mars will have among the stars as the year progresses, as seen from the Earth. Thus the 'F' shows where Mars will be on February 1st, and so forth. The month labels are not shown for Saturn and Jupiter, but you can count them out along the tick marks. • All the planets pass through roughly the same areas in the sky, and their paths would lie on top of one another in the chart. Therefore we have drawn the path of Venus a little closer to the center, and the others a little farther out.

Seasonal Sunlight Diagrams

• The seasonal sunlight diagrams at the equinoxes and solstices show the area of the Earth lit by the sun at that time of year. The diagram shows the Earth in the same orientation in each case, with the equator horizontal, north at the top, south at the bottom, and sunlight coming from the left. Using this viewpoint, the sun moves north and south during the year. This is actually due to the change in the Earth's north-south orientation with respect to the sun. • At the spring and autumn equinoxes the northern and southern hemispheres are receiving equal amounts of sunlight, as the sun is over the equator. At the summer solstice the sun is high in the northern sky and the north receives maximum sunlight. At the winter solstice the north gets the least sunlight. This is why the daylight area of the rise and set band is much wider at the summer solstice and narrower at the winter solstice.

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