

Perpetual National Edition

The Natural YearTM

Circular Almanac

How to Use the Circular Almanac

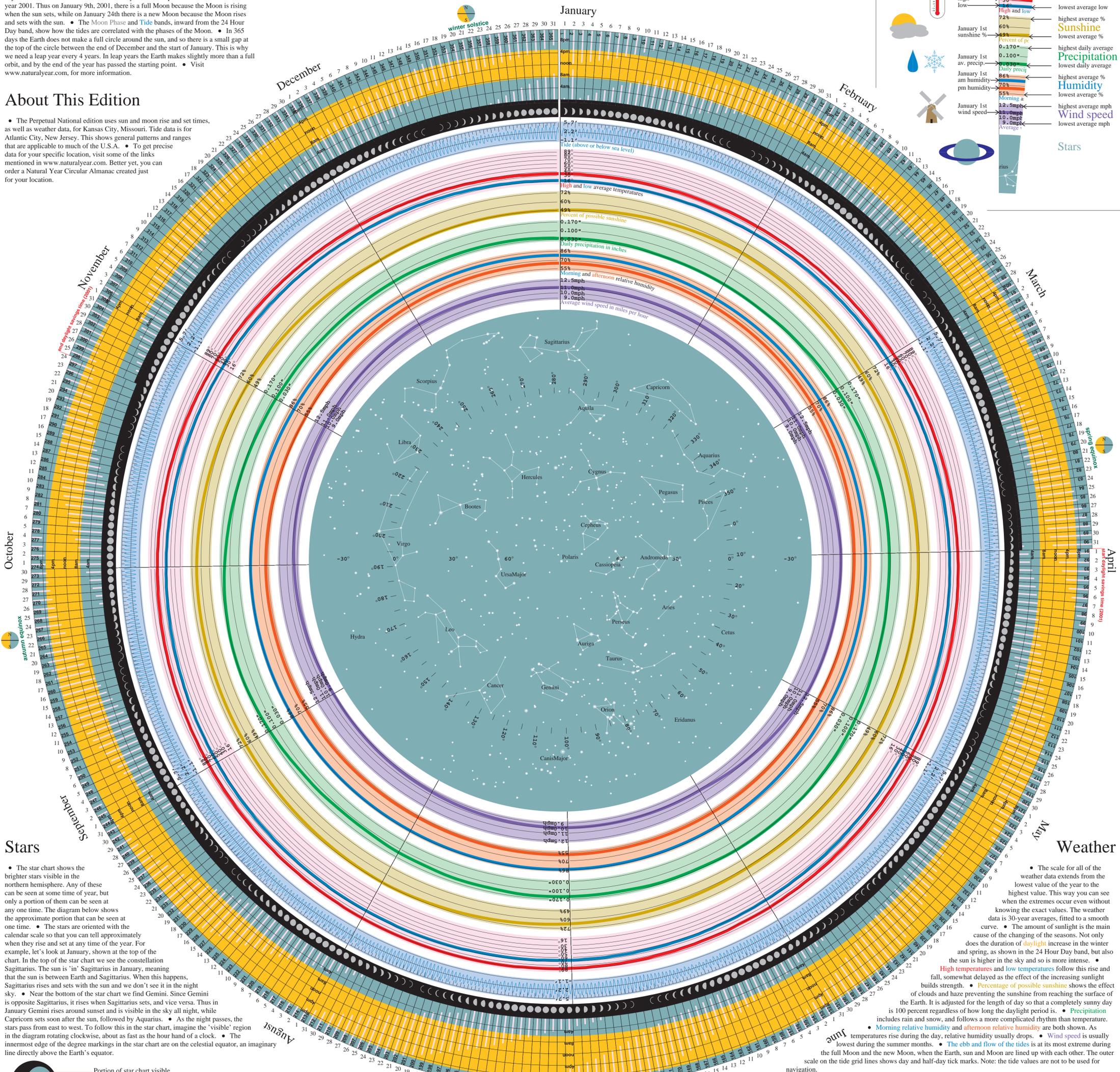
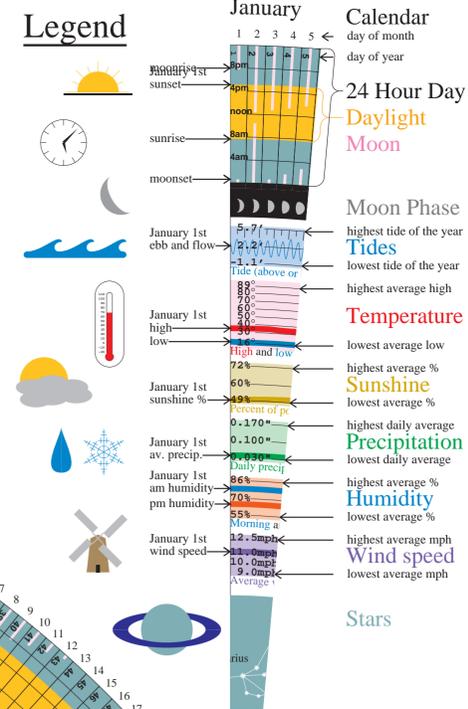
- The chart graphically shows yearly data for a variety of natural phenomena, with the graph wrapped in a clockwise circle corresponding to Earth's orbit around the sun.
- The Legend is a section from the top center of the chart with labels showing the different items displayed.
- To see the data for any day, find the day on the outside of the circle, then read inward 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. The Moon phases shown here are for the year 2001. Thus on January 9th, 2001, there is a full Moon because the Moon is rising when the sun sets, while on January 24th 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.
- Visit www.naturallyear.com, for more information.

About This Edition

- The Perpetual National 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.naturallyear.com. Better yet, you can order a Natural Year Circular Almanac created just for your location.

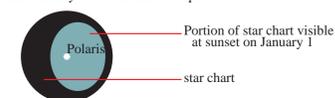
How Our Environment Changes as the Year Passes

Showing Cycles, Patterns, and Interrelationships



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 any 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.



Moon Phases

- The orbit of the Moon around the Earth is not synchronized with the orbit of the Earth around the Sun, so the phases of the Moon do not occur at the same times every year. The phases shown here are for the year 2001.
- You can approximate the phases for any year by rotating the Moon Phase band shown here. The number of days to rotate clockwise is found in the table on the right. For example, for the year 2002, the Moon Phase band is rotated 19 days. Thus there is a full Moon on January 28, 2002. The Tide band is rotated the same amount.

Visit our website, www.naturallyear.com, for much more information

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.