

## Our Night Sky for December 10th

What time is it? A common question often asked and answered. How can it be that everyone is using the wrong time?

The simplest way to measure the length of a day and therefore the time of day, is to mark the precise time that the sun reaches its highest point in the daytime sky. This is the starting point we call noon. As the earth turns, the sun sets and rises again, then climbs to the zenith and noon of another day. On your clock twenty-four hours have passed and we call that a normal 24-hour day.

The generally accepted 24-hour day, this is a solar day, also referred to as tropical time is not accurate however. A day, the true time it takes the earth to rotate once is 23 hours 56 minutes and 4 seconds and a solar year is 365 days 6 hours and 9 minutes.

This is all because we use the sun as our standard reference and the earth's motion along its orbit changes the time it takes for the sun to reach its peak elevation.

If you use a distant star at its zenith as the reference you will measure sidereal time and a day's length is 23 hours 56 minutes 4 seconds.

Our modern calendars use several types of correction and most clocks and electronic devices automatically adjust time and there is almost no effect due to these slight differences in actual time and your everyday time. The only people that use sidereal time regularly are astronomers viewing Our Night Sky.